Vol. 2 TECHNOLOGY DEPARTMENT OCTOBER, 1920 No. 7

First Copy

THE PAPER INDUSTRY

The Monthly Educational Journal of the Paper Industry.

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NEW YORK

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Our best and whitest South Carolina clay shipped pulverized, or cracked down to small lumps.

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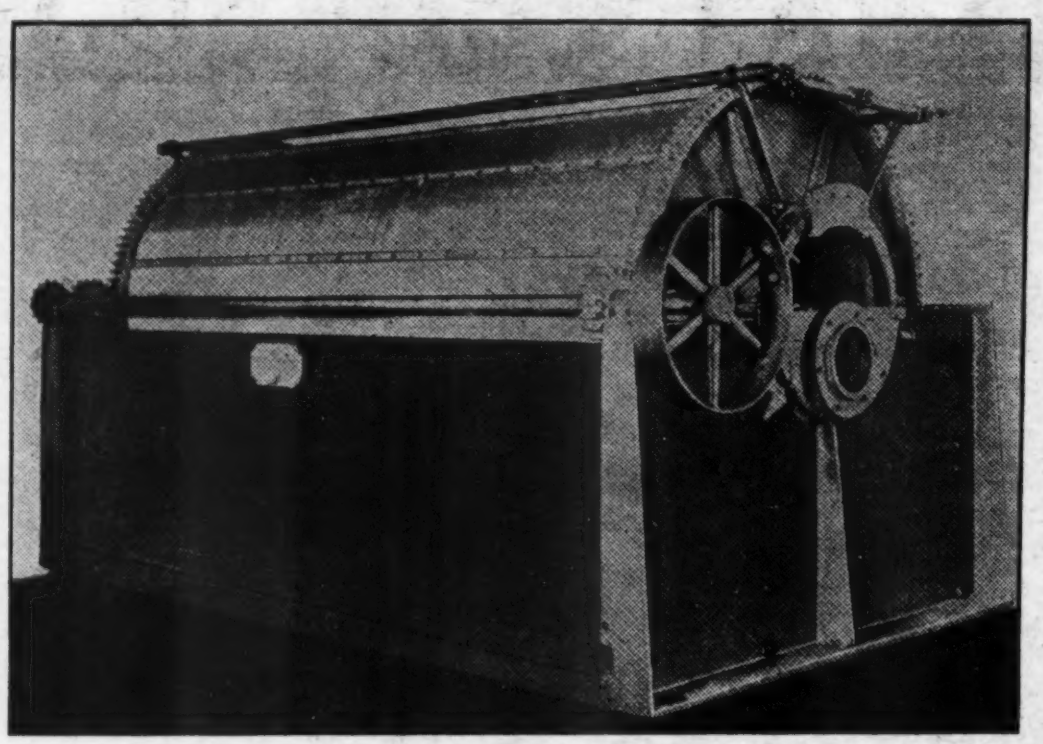

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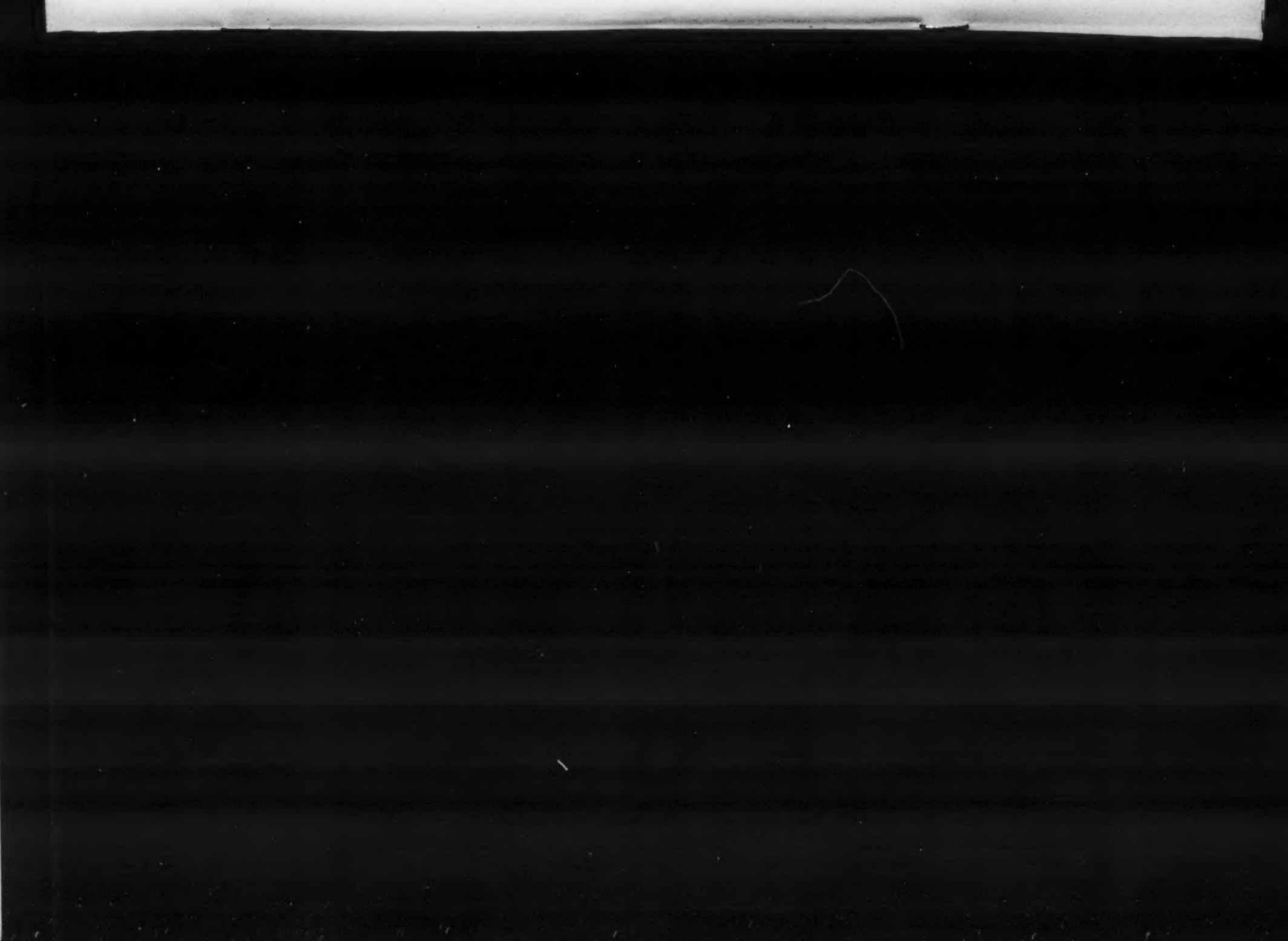
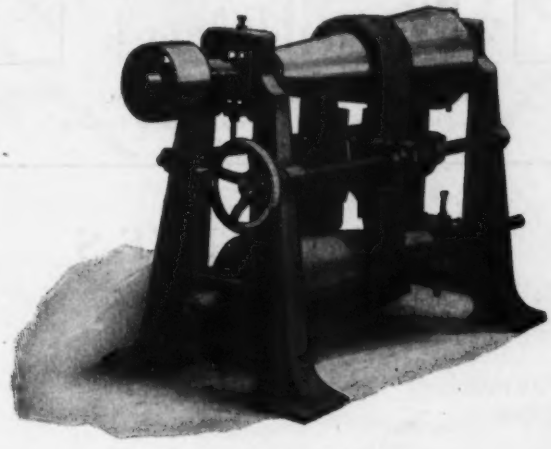
We Slush or Thicken Your Pulp with Three Sizes of the North Pulp Thickener

Father Took Us Out of School Because It Interfered with Our Education. That's Why We Are Machinists and Molders.

The Green Bay Foundry and Machine Works

of GREEN BAY, WISCONSIN





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Any horsepower 1 to 200.

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2717-2747 North 15th Street
PHILADELPHIA, U. S. A.

Vol. 2—No. 7

THE PAPER INDUSTRY

A. SCOTT DOWD
Editor

A MONTHLY EDUCATIONAL JOURNAL
Devoted to the Interests of the Pulp and Paper Industry

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Get the most for your money by getting next to our qualities and prices!

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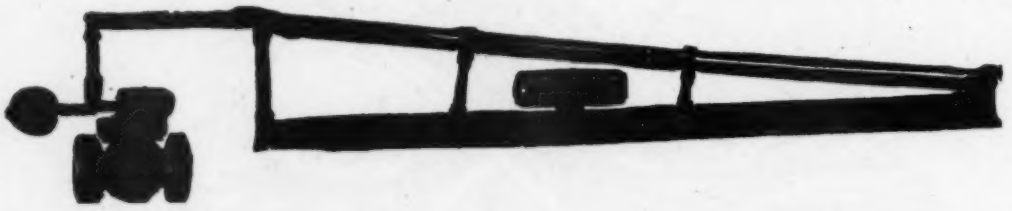
Telephones: Murray Hill 4246-47-2170 *Inquiries Solicited*

Highly Intermittent, Irregular Boiler Loads of Pulp and Paper Mills Easily Mastered by the Copes Boiler Feed Regulator



If you have tried out all other makes of boiler feed regulators with your highly intermittent and irregular loads, and have not tried the Copes, you have stopped just short of complete success.

Experience has repeatedly proved that automatic feed water regulators are not only entirely satisfactory for pulp and paper mills, but highly desirable when designed on the right principles. Unfortunately, there have been many devices on the market designed on the wrong principles.

In 1918 one of the foremost consulting engineers of Canada made a careful investigation of boiler feed water regulators. As a result, he selected and specified Copes regulators to be used in many important pulp and paper mills in Canada. One of the large Paper Mills writes, "we have been getting excellent results from your regulator."

Wherever the Copes regulator has been tried, it has been adopted, and the entire plant equipped. More Copes regulators have been installed in pulp and paper mills during the past year than in the previous six, and orders for more are coming in faster than ever. Copes regulators now control over 9,000,000 boiler horsepower in all parts of the world.

How Much Would a Saving of 1½ to 4½% Mean in Your Plant?

Is it worth saving? Such savings are not at all unusual by any means.

Again, why let men compete with machines which can do the job so many times better? Why not let your skilled experienced men use their brains towards the promotion of economy and efficiency in the plant where it will do the most good? Or why leave such an important job as boiler feed regulation to be performed by unskilled, common labor, when anybody can supervise the automatic operation of Copes Regulators with so little attention and effort? Peak load carrying capacity can also be increased without installing additional boilers, which are expensive and hard to get nowadays. The Copes also positively prevents slugs of water and wet steam being carried over from the boiler into a batch in process.

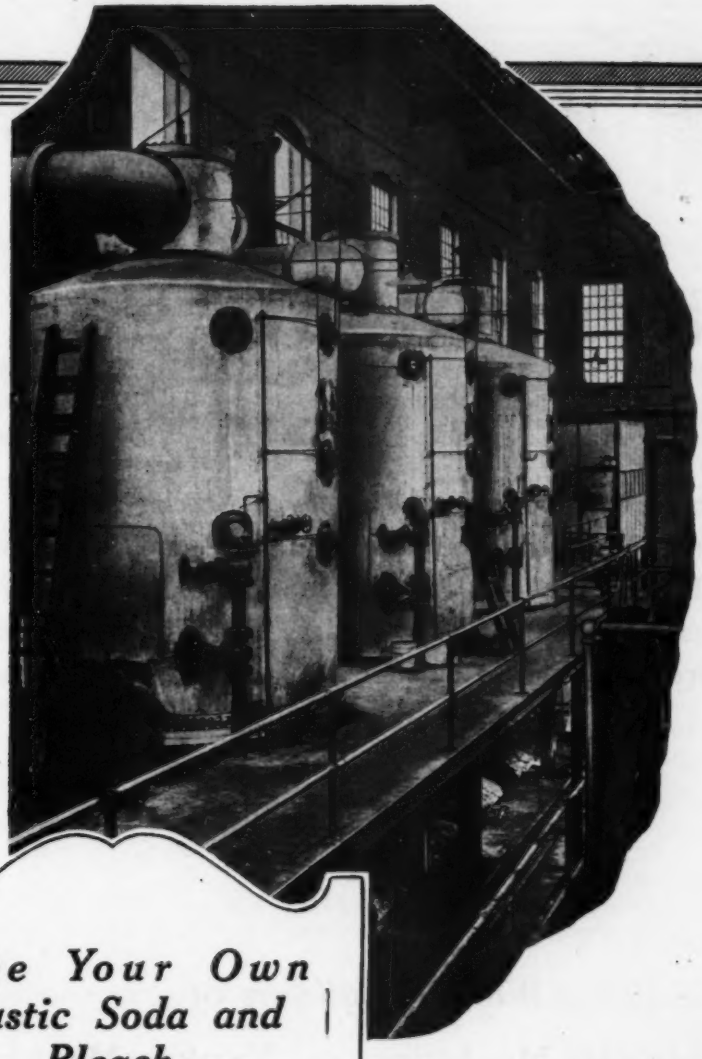
Now is the time to bring your plant up-to-date. Take advantage of the prevailing high tide of prosperity in the paper industry. Key up your plant to the highest point of efficiency without delay. The days of competition and restricted appropriation for plant improvement are bound to come again. Ask for Bulletin I.

NORTHERN EQUIPMENT CO.

The World's Largest Manufacturers of Feed Water Regulators

104 West 11th Street **Erie, Pa.**

No. 97



Make Your Own Caustic Soda and Bleach

Some of the largest pulp mills in the country find it profitable to make their own caustic soda and bleach.

Zaremba Evaporators are an important part of the equipment which these mills use for this purpose.

The cut illustrates a Zaremba crystallizing evaporator for concentrating salt-caustic solution from electrolytic cells; located in one of the largest sulphite pulp mills in the world.

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New York Office, 95-97 Liberty St.

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Now Manufacture

Harmon Screens

Admitted to be the best Flat Type Screen now on the market. Essential for clean sulphite and soda pulp. Also Patent Inclined Screens made under the Harmon patents. We solicit your orders for Harmon Screens and are prepared to furnish all necessary repair parts for Harmon Screens built heretofore.

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Watertown, New York

REG U.S.

Wayne

TRADE MARK

Eliminating The Appalling Waste of Oil and Man Power

Wayne Filtration Systems mark a new epoch in the struggle to eliminate the appalling waste of oil and man power.

Skilled filtration engineers, conducting *exhaustive* experiments under *actual working* conditions, have given to Wayne Filtration Systems *advanced, proven* ideas in design, construction and operation.

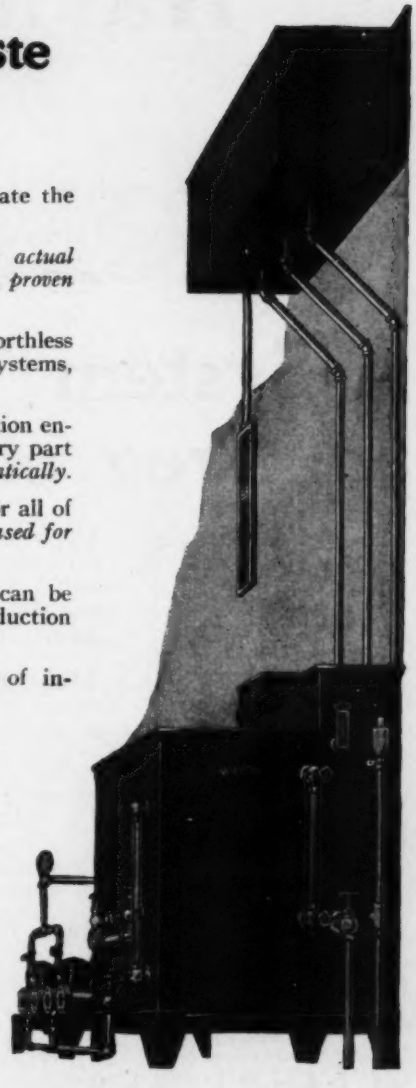
Thousands of barrels of costly lubricating oils, formerly discarded as worthless after first use, can now be *entirely reclaimed* by Wayne Filtration Systems, *used repeatedly*, still possessing *full lubricating* value.

Clever improvements in mechanical arrangement, adjustment and operation enable Wayne Filtration Systems to *amply lubricate* every moving machinery part and to be *easily* and *quickly cleaned*. A *clean, pure lubricant* is fed *automatically*.

Thousands of *high-waged mechanics* and *workmen* now spending a part or all of their time answering machinery's incessant cry for oil can now be *released for other duties*.

Your present *waste* of *costly lubricating oils* and *high-waged workmen* can be *entirely eliminated*. The efficiency of your cutting oils and machine production will be increased.

Wayne's Filtration Engineers await your summons with a vast fund of information for your disposal gratis.



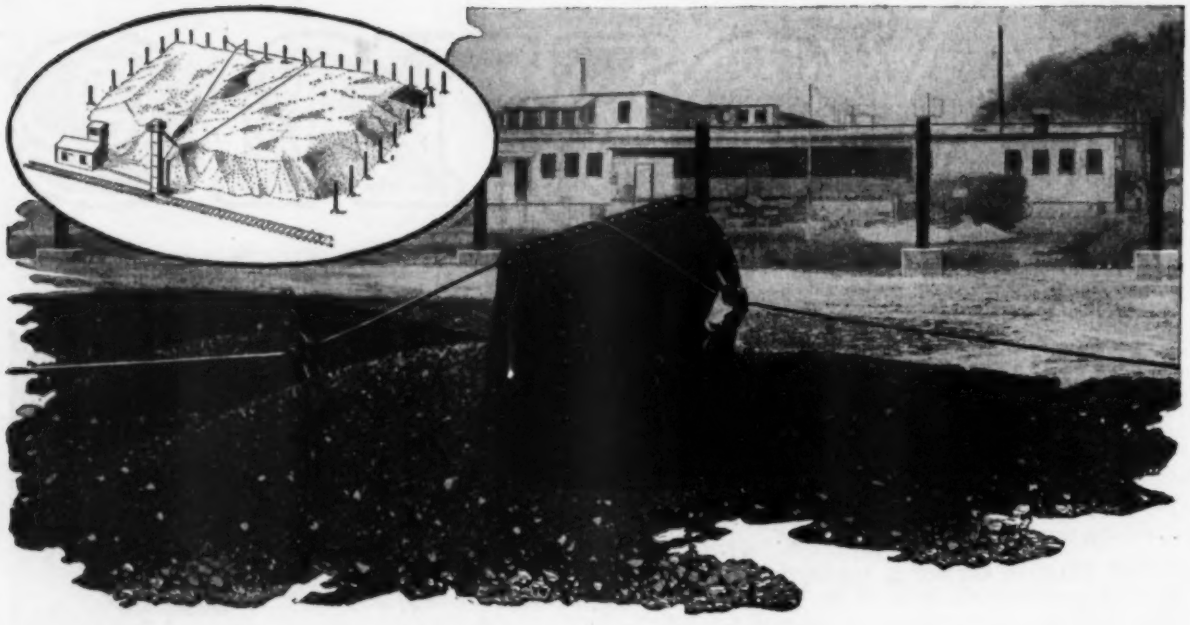
Wayne Filters Are Easy to Clean

Wayne Oil Tank and Pump Company
731 Canal Street **Fort Wayne, Indiana**

A national organization with sales offices in thirty-four cities. Repair stocks and service at your command.

Gasoline and Oil Storage Systems, Oil Filtration Systems, Oil Burning Systems, Furnaces for Metal Melting, Forging and Heat Treating.

Filters



A System That Stores Coal on an Area of Any Size or Shape

Beaumont
ONE CONTRACT
ONE RESPONSIBILITY

A Few Plants Using Beaumont Equipment

Wilmington & Phila. Traction Co. Wilmington, Del.
Alfred Wolstenholme & Sons Co. Philadelphia, Pa.
Philadelphia Suburban Gas & Elec. Co. Cromby, Pa.
United States Nitrate Plant No. 1 Sheffield, Ala. (2 contracts)
Monadnock Paper Mills Bennington, N. H. (2 contracts)
National Electrolytic Company Niagara Falls, N.Y.
Baldwin Locomotive Works Philadelphia, Pa.
Michelin Tire Co. Milltown, N. J. (2 contracts)

The installation of a Beaumont Cable Drag Scraper System of coal storage does not require a large expenditure for the preparation of storage space or area. Any shaped piece of ground adjacent to your plant or railroad siding and sufficiently large to accommodate the storage pile, is all that is required. Realize how much saving in dollars and time this one feature represents.

The storage area is staked off by posts and the drag scraper cable attached as shown in the little illustration. If a larger area is required, the posts may be moved in any direction.

See how the Beaumont Cable Drag Scraper operates as illustrated in the oval above. The coal is dumped into the track hopper and elevated to a chute which piles it up. Then the drag scraper distributes it over the storage area, storing the various sizes separately if so desired. Any size coal can be handled. When the coal is needed in the boiler house the operation is reversed.

No skilled or licensed labor is needed to operate the Beaumont Cable Drag Scraper. *One* man operates the entire system. 50 to 100 tons an hour can be stored at a labor cost of less than 1 cent a ton. Should fire threaten in any section of the coal pile the drag scraper will attack it immediately. In some cases several manufacturers have combined in a co-operative coal storage plan whereby sufficient coal can be stored to insure against a possible shut down.

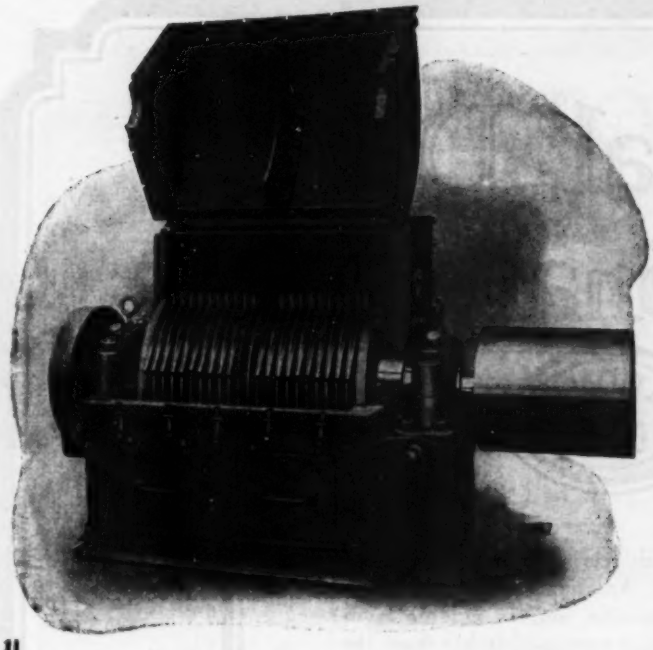
A reserve storage system capable of taking care of any amount of coal whenever you can get it is today the best insurance against a forced shut down.

The Beaumont book "Cable Drag Scraper Systems for Storing Coal" gives much information of value to executives. It will be sent on request.

R·H· BEAUMONT CO·

Coal and Ash Handling Systems for Boiler Houses

934 Arch Street **Philadelphia**



All Working Parts Are Accessible

All Rotating Parts Perfectly Balanced

Jeffrey TYPE "E"

Swing Hammer Shredder

(BALL BEARING)

Meets the demand for a machine that will insure
Large Capacity and Uniform Product
in the reduction of Wood Chips, Bark and other fibrous materials

Shredder Catalog No. 259-H gives full particulars. Write for copy.

The Jeffrey Mfg. Co.
813 N. Fourth St., Columbus, O.

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Manufacturers of Elevating and Conveying Machinery, Chains, Crushers, Pulverizers, Shredders, Portable Loaders, Locomotives, etc.

An excellent Shredder installation, showing arrangement of Chipper, Shredder and Conveyer

"National" Dyes are National Assets

NATIONAL U.S.A. DYES

A new national spirit is arising from the ashes of the great war. Americans are beginning to think internationally, and to emerge from the provincialism which was inseparable from the first century's growth of the Republic.

¶ A pride in American quality is taking the place of parochial indifference to foreign opinion of the things we create. American quality is built up on the triple foundation stones of American capital, American labor, and American material.

¶ A new significance is thus given to the term **"National Dyes,"** which means that the wide line of dyes made by the **National Aniline & Chemical Company, Inc.,** are, type for type, the equal of, and in some cases, superior to, any foreign dyes which have been offered in times past on the American market. **Strength, brilliance,** and **permanence** are the characteristics of the colors produced by **National Dyes** on American goods, and are the assurance to the discriminating buyer that the national desire for quality is being adequately safeguarded.

National Aniline and Chemical Co., Inc.

General Offices: 21 Burling Slip, New York

Quality

EDITORIAL

Shaking Hands with the Public

TO the salesman is entrusted the care of creating and maintaining a favorable opinion in the mind of the buyer toward the product which he sells. Aside from the transaction of his immediate sale and that of representing his individual company, a bigger and higher opportunity is granted to him, that of being the expression of the industry at large to which he belongs and introducing it favorably to the mind of the public.

This particularly is true in our great industry of which we are proud and on which so much is really dependent.

It has been said that the public knows too little about paper manufacturing and the problems confronting it. So much has it been in the habit of receiving its large volume of literature and all the products which are made from it, that nothing short of a wide and organized propaganda will make it realize that unless something is done, and done quickly, we will find that our industry, so far as it being an economic one is concerned, will ere long be remembered as having "passed in the night."

The Salesmen's Association of the Paper Industry is in a position to perform an excellent service in this respect. Representing the manufacturers of paper and pulp, its members are recognized as the mouthpiece of the industry.

This young and virile organization is one of the youngest in the family of the American Paper and Pulp Association, and already can boast of more than one hundred and fifty members out of what is believed to be a possible five hundred.

At their first Convention, which was held in Chicago on September 29, these men gathered from the East and Midwest to learn from men who spoke with authority on the financial and labor situations in this country, the coal problem and the facts pertaining to the transportation situation.

The character of the gathering was manifested by the excellence of their program.

Uncommon in the annals of business organizations, they elected a chaplain, a man who is a renowned Doctor of Divinity and who had addressed them on the subject of "Constructive Salesmanship," wherein it was stated that a man should be "conscious that he is, after all, but a sharer with all other forms of life in doing the Infinite and Eternal Will."

Some fundamental steps in "Scientific Salesmanship" were given to them by the Vice President of a school for salesmen, and finally they listened to an inspiring address by an eminent jurist on "Law and Order the Pre-Requisite of Civilization."

Thus ended the Convention of the Paper Mill Salesmen. The inspiration they received and the knowledge they obtained should enable them to understand more clearly the economic situation as it exists today and be thereby enabled to spread the gospel of truth among the buyers of paper.

A Nation Wide Service *for* Advertisers and Printers

Making your paper purchases a more profitable investment

THE most comprehensive paper service ever established has been inaugurated simultaneously in all of our branches clearing through headquarters in Chicago. It is for the firm who issues or prints advertising literature ranging from the smallest booklet up to catalogues the size of Montgomery Ward or Sears, Roebuck.

It covers the selection and use of the cheapest grades to paper and cover stock De Luxe, and every size and weight known to the paper business.

From folders to broadsides and from phantom weights to bristols as heavy as lumber, your every need is covered, as well as papers for every process of reproduction that will reproduce merchandise, products, or service, in a manner second only to the original.

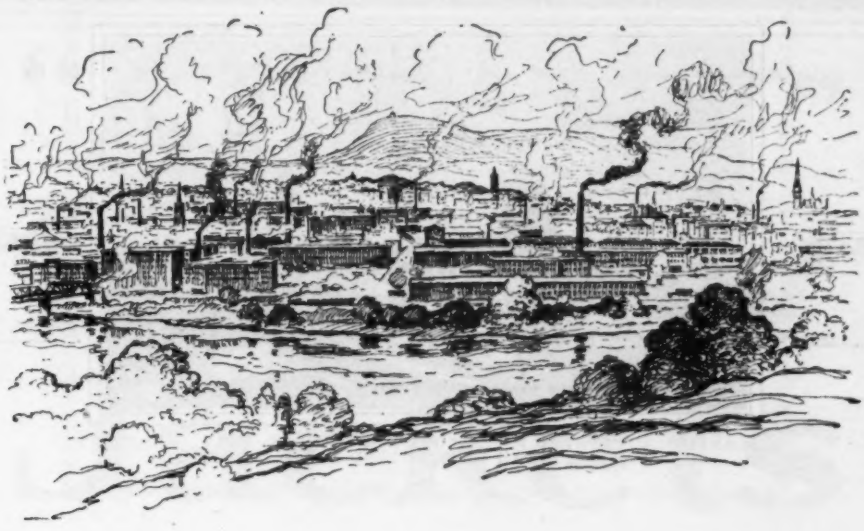
The publisher will find our manufacturing service covers every grade of magazine book, from the cheapest to the best, any finish, any quality, any tonnage. Books, magazines, publications, each have a mission which is enhanced or retarded by the paper used.

SEAMAN SERVICE PAPERS

"For every printing need"

Seaman Paper Co.

1174, 208 South La Salle Street
Chicago



Working from the suggestions of the mill men themselves

How the world's largest manufacturer of fine papers eliminates loose manufacturing methods by investigating the suggestions of its men

ANY man who has had several years' experience in a paper mill is a man whose advice on paper-making is worth having. A belief in this fundamental fact is one of the guiding principles of the American Writing Paper Company.

Big results oftentimes spring from chance ideas. The American Writing Paper Company realizes this and has established its Scientific Research Laboratory to follow out the ideas and suggestions of mill men and mill superintendents in the making of paper.

In this sense the Laboratory is a service organization for the men in the mills. The great work it has accomplished in taking loose methods out of the making of paper and in standardizing the finished paper, has been done largely as the result of following out the "leads" of these men.

This means that a high degree of efficiency prevails in every one of the 26 mills, and as a result every man contributes directly to the Company's success.

By standardizing the papers manufactured, on the other hand, the Laboratory makes it possible to have a more all-year-round production.

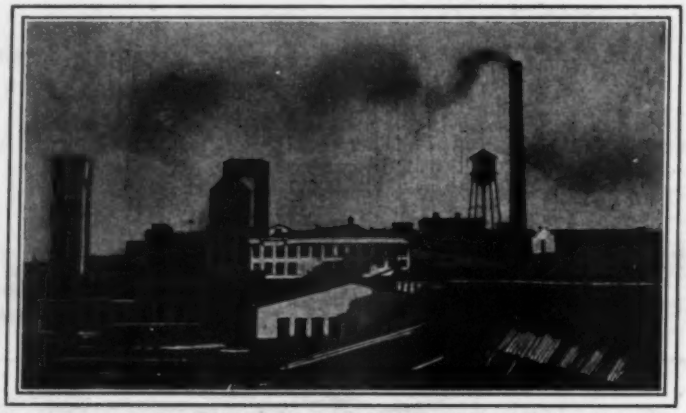
The American Writing Paper Company manufactures a greater variety of papers and uses a more diversified and specialized equipment than any other paper manufacturer in the world. A large majority of their mills are located at Holyoke, Mass., the center of the paper industry, where the craft skill in the making of fine papers has been developed, and where the finest craftsmen in this country have learned their trade.

The Watermark of Excellence

AMERICAN WRITING PAPER COMPANY
Holyoke, Mass.

AMERICAN WRITING PAPER COMPANY

EAGLE A PAPERS: BONDS — WRITINGS — LEDGERS — BOOK PAPERS — OFFSET PAPERS — COVER PAPERS — PAPETERIES — TECHNICAL PAPERS — SPECIALTIES



PLANT OF NORTHWEST PAPER COMPANY, CLOQUET, MINN., EQUIPPED WITH SIROCCO PRODUCTS

What Is "ABC" Equipment Doing for Present-Day Paper Mills?

MODERN, scientific methods for ventilating, heating and air-conditioning have assisted greatly in increasing the productive power in paper mills, some of the chief benefits being—

(1) *Assisting materially in increasing production through improved methods of drying.*

(2) *Assisting in meeting labor problems through improvement of conditions under which workers labor in the mills.*

(3) *Assisting in improvement of quality of production through scientific treatment of atmospheric conditions under which the product is obtained.*

(4) *Assisting in the more economical maintenance and operation of the mills.*

A brief survey of how "A B C" Equipment, as applied to paper mills, is rendering this vital service, is given in our Bulletin "A B C Equipment for Paper Mills." Would you like a copy?

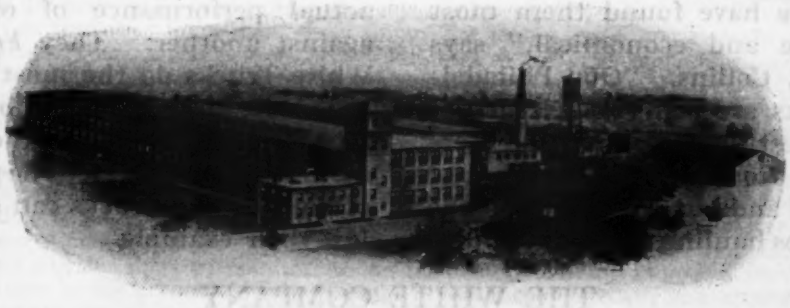
AMERICAN BLOWER COMPANY
DETROIT, MICHIGAN

"ALBANY" Felts *and* Jackets *for* Paper & Pulp Mills

ALBANY FELTS are adapted for every type of Paper and Pulp Machine, and for every kind of stock. Every one is made of Pure Wool of the very best quality.

¶ Twenty-five years' experience in making Paper Makers Felts and Jackets has shown us how to make them as best suited to the needs of various kinds of machines and stock.

¶ Every possible effort is made to give our customers the best satisfaction and to weave into our Felts and Jackets the longest possible life.



ALBANY FELT CO.
ALBANY — NEW YORK

Part of a fleet of 9 White Trucks owned by the Dill & Collins Company

Philadelphia Paper Manufacturer Standardizes on Whites

AFTER several years' experience with motor equipment of different makes, the Dill & Collins Company has standardized on White Trucks. This well-known paper manufacturer now operates a fleet of nine Whites, six at the Philadelphia mill and three at the New York City branch. The oldest White is now in its fifth year of service.

"We have standardized on Whites because we have found them most dependable and economical," says Mr. G. N. Collins. "Our Philadelphia trucks are being operated over the roughest kind of streets, delivering paper from the mill to depots, customers and our store, and on the return trips hauling various mill supplies, including machinery. The performance of our White fleet has been satisfactory in every way."

Through their economy of operation, their dependability, and their adaptability to a wide range of service, White Trucks have become an important factor in paper mill transportation. Whites are the choice of mill owners who *know* truck values in terms of earning power, through actual performance of one truck against another. They *know* that White Trucks do the most work for the least money, and back that knowledge by increasing their investments year after year. The purchaser of one or a few trucks can safely follow their example.

THE WHITE COMPANY
CLEVELAND

White Trucks

$300.00 for an Article

Received Between October 1, 1920, and September 30, 1921

THE PAPER INDUSTRY was started with the one idea of being helpful to the whole Pulp and Paper Manufacturing Industry. We believe we have succeeded. At least many people tell us so, but we want to do more in being helpful, so that every man in the industry may know more of his chosen work.

Many men in this industry have valuable ideas that would be worth hundreds, possibly thousands of dollars, for other men to know, and at the same time will not harm the one man that knows it. The old idea of hiding our light under a bushel for fear someone else will learn of something that we may know has passed, and the war was to a large degree responsible for this. It is stated that America advanced more in most of the arts and sciences, as well as manufacturing processes, in the few years of the war period, than it had in fifty years before.

We lose nothing by giving out knowledge. If each of two men have a dollar and each gives his to the other, both will have the same and gain nothing, but if each of two men have an idea, and each gives away that which he has, he does not lose, but each has two, and so if we multiply this by one hundred or a thousand, each man that formerly had only one idea, now has a hundred or thousand, and no one has lost.

So, in order that the greatest number may have the greatest amount of knowledge, and in order to get men to take the time for the proper study and preparation of the right kind of an article, we will give to those who will endeavor to furnish us with real helpful articles, during the next twelve months, the following amounts:

For the best article furnished in this competition, we will give the sum of $300.00.
For the second best article we will pay $100.00.
For the third best article we will pay $50.00.
For the fourth best article we will pay $25.00.
For the fifth best article we will pay $15.00.
For the next thirty-one best articles, we will pay $10.00.
For the next forty best articles we will pay $5.00.

Any one man may write as many articles as he desires, providing they are on different subjects. Each article, however, should fill at least three pages of THE PAPER INDUSTRY.

Several well known men of the industry will be chosen as judges in this competition, their names to be announced at a later date, and the publisher of THE PAPER INDUSTRY will only decide first whether the article is worthy of publishing at all, and if so, then it will take its chance for the $300.00 prize.

In order to make it possible to publish these papers during the next twelve months, papers must begin to come in immediately and the minimum price of $5.00 will be paid for each as they are published, the balance representing the prize money will be awarded after the twelve months period has expired, and the decisions have been made.

Some men feel that they know many good things, but cannot write them down in proper fashion. It will not be necessary that these articles be written to show any great amount of learning, as many men who have had little schooling may be able to furnish the most helpful ideas, and it is something that is helpful that we want; we have an editor for the very purpose of carefully scrutinizing everything before it goes to the printer, so that it may be grammatically and typographically correct.

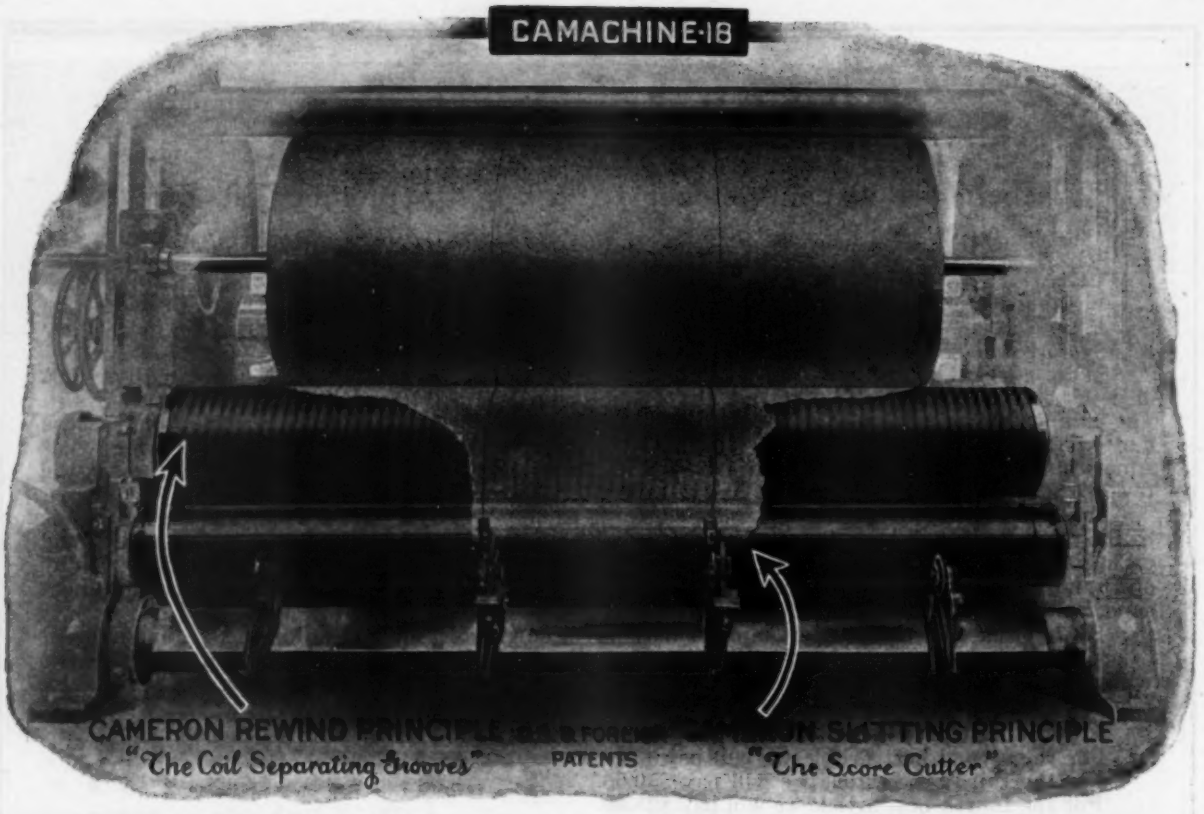
You can choose your own subject, as there are so many things to be written about in this great industry that we will not even attempt to outline the full list of subjects, but it may be of some plan to get a larger product out of a machine; it may be on the subject of saving in the power plant; saving bleach, dye, or one of many other things; it may be a plan to make the wire or felt last longer; some method of making a better sheet without increasing the cost, or making as good a sheet by reducing the cost; a new idea in the process of pulp making; in fact it can be on any subject that will be helpful to pulp and paper manufacturers, and their employes.

Anyone can try his hand, be he president, manager, superintendent, chemist, engineer, machinery man, foreman, or workman. If some one should feel they cannot write a long article, then write a short one. We will pay for it, if we can use it.

Start NOW and get your article or articles in at the earliest possible time.

Address all articles in this competition to

"Contest,"
THE PAPER INDUSTRY,
356 Monadnock Block,
Chicago, Ill.



Heavy Duty Paper Mill Rewinder

CAMACHINE—18

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Note the New Feature of Cameron Rewinding Principle—the Coil Separating Grooves

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Cramped for floor Space in Your Beater Room?

Here's a profitable way to not only make your present floor space go twice as far—but at the same time reduce your power consumption 50%—*astill keep up production.*

Install a Bird Continuous Beater Attachment

It pays for itself six times over the first year. Keeps stock uniform. Saves time and labor. Removes strings and rags from board stock. Together with one ordinary beater it accomplishes as much work as two beaters. It is a simple, practical and effective device, designed to be attached to any ordinary tub.

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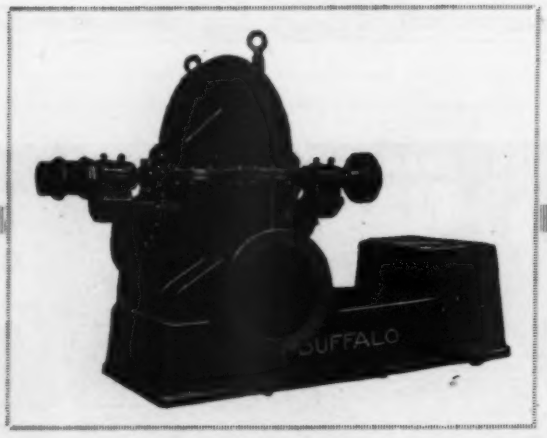
Continuous Beating

88-118



Buffalo Class "S" Centrifugal Pumps

HORIZONTALLY divided casings Double Suction Impellers; can be operated over a wide range of capacities without danger of overloading motor or turbine. High efficiencies are obtained in even the smallest sizes against either high or low heads.

Are being used successfully in many of the largest Paper Mills for General Water Supply and for handling White Water.

Let our Engineering Department show you how we can reduce your power bills—and eliminate your pumping problems.

Built in sizes from 1" to 48" for heads up to 200 feet.

Suitable for pulley, Electric Motor, or Steam Turbine drive.

Write for Bulletin 270-27

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Manufacturers of Steam, Power, and Centrifugal Pumps and Condensers

New York	Pittsburgh	St. Louis	Minneapolis
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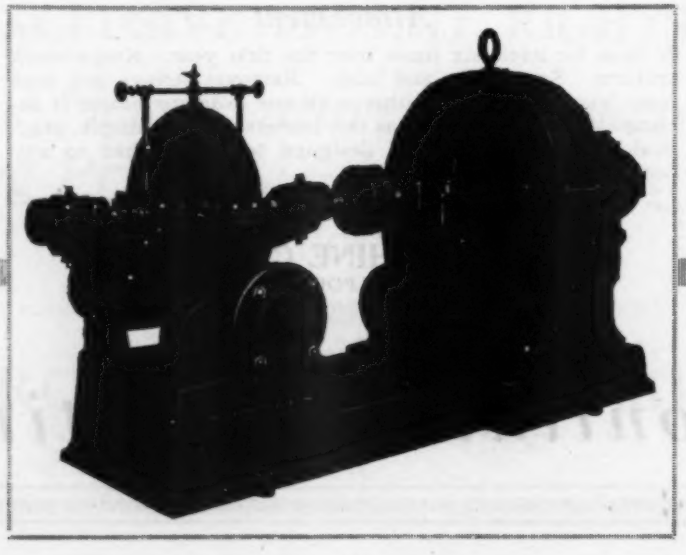
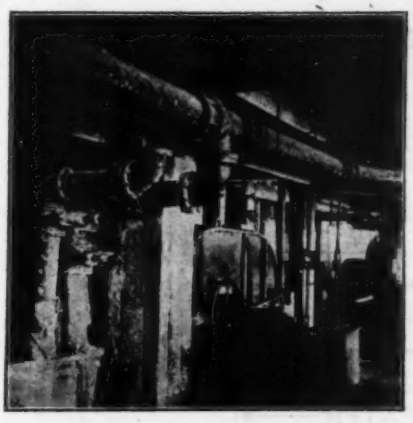
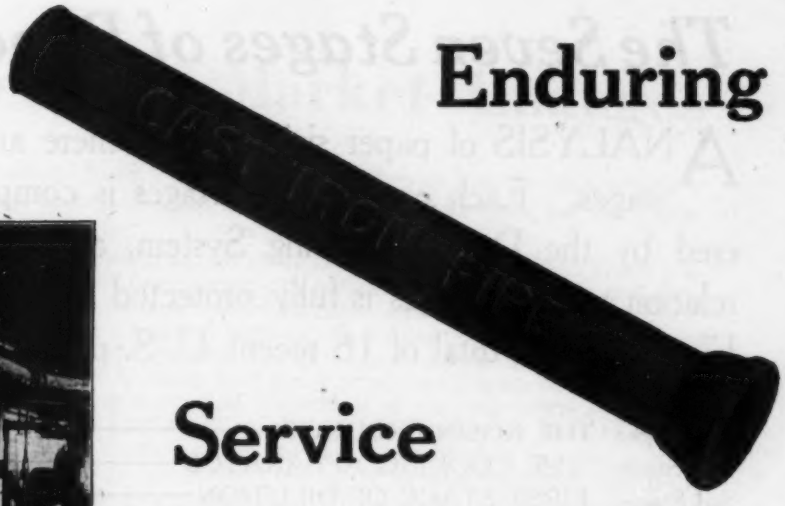


Enduring Service





In the treatment of wood pulp by the sulphite process Cast Iron Pipe gives more satisfactory service than any other kind of pipe owing to its greater power to resist rust and corrosion. Avoid costly leaks by installing

U. S. CAST IRON PIPE

2" to 84" diameter.

Bell and Spigot, Flange
Plain End, Threaded, etc.

Fittings—Standard or Special

CAST IRON CYLINDERS for PAPER DRYING MACHINERY
HEAVY CASTINGS to ENGINEER'S DESIGNS

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The Seven Stages of Paper Sizing

ANALYSIS of paper sizing shows there are seven essential stages. Each one of these stages is comprehensively covered by the De Cew Sizing System, and the System, in its relation to these stages is fully protected for practically the next 17 years, by a total of 16 recent U. S. patents and applications.

1st Stage: THE ROSIN PRODUCT →
2nd Stage: THE COOKING APPARATUS →
3rd Stage: FIRST STAGE OF DILUTION →
4th Stage: The EMULSIFYING APPARATUS →
5th Stage: SECOND STAGE OF DILUTION →
6th Stage: METHODS OF TREATING COLD EMULSIONS →
7th Stage: TREATING PRODUCTS OF THE BEATER →

THE De CEW SIZING SYSTEM

Back of the De Cew Sizing System is a Service, exclusively for users of our System, that includes complete examination of water and stock-beating conditions and paper machine variables, and necessary adjustments of methods to meet these conditions.

All the Engineering Service for plans, installations and adjustments are provided by us.

In short, the road to maxim sizing efficiency in your plant leads straight to the De Cew Sizing System.

Do You Wish to See a Representative?

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PRODUCTION ECONOMISTS · ENGINEERS

MONTREAL
McGill Building

No Impending Market Changes

PAPER prices generally have held comparatively firm during the past month—that is to say that quotations from the mills to the trade have not been generally even shaded.

The pulp and paper mill conditions are all reported firm and strong. There has been some shading of quotations from jobbers to consumers, but this does not generally reflect any change in quotations from mills to jobbers.

There is on the other hand a marked tendency on the part of consumers of paper to generally withhold orders from jobbers and mill agents primarily caused by the widespread conviction among consumers that paper prices must come down. "What goes up must come down" seems to express the whole of the bear price argument, but this statement is being met by the mill men with the admission that the rule quoted above is probably true, but applied to the paper market, they say, there is no problem involved that need worry the jobber, consumer or manufacturer, for they maintain that the price when it does come down will decline without disaster to anyone.

And for this statement, there seems to be very good reasons. In the first place, it is pointed out that there are no reserve stocks of pulp or paper anywhere in the world. Mills have on hand today only about one-third the amount of finished paper stock on hand a year ago September first. Jobbers' stocks are, if anything, lower on the average than a year ago. Some authorities believe them 10 per cent lower. Certainly they are no larger, for it is not conceivable that the average paper jobber would load up his warehouses with the highest priced paper known since the Civil War days, particularly when he has been looking at a deflation market in so many other staple commodities for the past five months.

Then again in the large majority of paper lines, the jobber has been unable to get more paper than he needed for his customers' current demands. And this latter condition in the main applies to the consumer who on the average is not stocked to any large extent.

The condition is not, therefore, at all analogous to the paper stock situation in the spring of 1919, when jobbers and consumers had stocks of paper on hand or on order sufficient to permit them to stay out of the market for a matter of six to seven months.

Therefore, and hence, say the mill men, and their contentions are being supported by a large number of jobbers also, there will be no prolonged depression in the paper market this Fall of 1920 as there was in the Spring of 1919, for the big stocks of paper are not there.

Then the raw material situation with all mills in this country is still stoutly bullish. Ground wood is scarce and abnormally high. Present prices reflect either an abnormal demand or an abnormal shortage, and the chances are in favor of the shortage.

Coal prices are still high and mills generally are burning the highest priced coal in their history.

Wood prices are highest on record and all current production from now on will be made from highest-ever-cost on that basic raw material.

Steel products, metals and all repair parts and machines are still at top notch figures.

Then labor is commanding a fine, big, nifty price, which contributes no small amount to the high overheads which each mill must add to its paper and pulp prices.

Transportation costs have all recently advanced substantially, and this item does not permit its absorption "without cost" in the current quotations on paper.

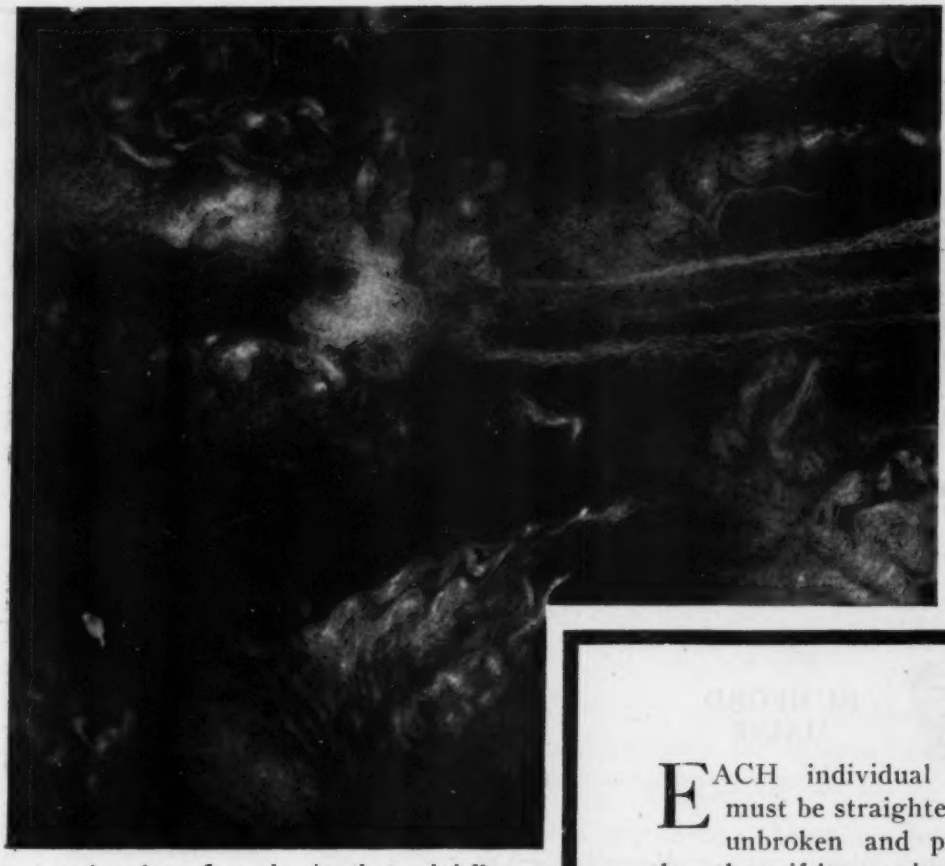
And so on throughout the lists of raw materials and supplies,—all, with only minor exceptions are contributing to the price maintenance in the paper industry. And yet, we would not be understood to be favoring the affirmative side of the question: "Resolved, that paper prices will advance."—But what we do maintain is that paper prices have every legitimate reason to maintain firmly for the present and from present indications, if no untoward complications set in, when the time comes for paper prices to come down, they will in all probability come down slowly, orderly, and without disaster to any one concerned.

To Our Customers and Friends:

In these times of stress when it seems impossible to fill orders as quickly as you would sometimes wish, we want you all to know that every effort is being made to serve you to the best of our ability, and that every ounce of our strength is being exerted with that thought in view—namely, to serve—so that you may always have on hand sufficient of the wires that are noted for their long runs, and which always make good our claim that

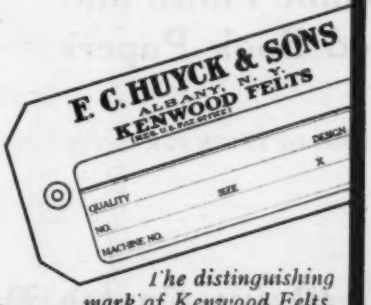
"Appleton Wires are Good Wires"

APPLETON WIRE WORKS
Appleton, Wis.



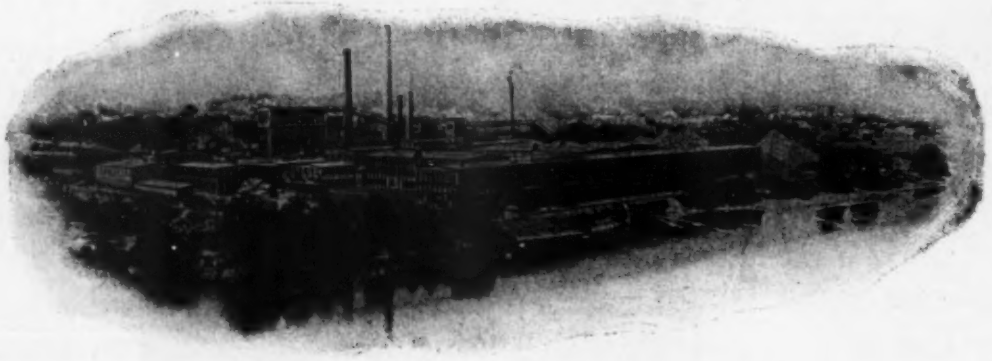
A portion of raw fleece showing the tangled fibres.

EACH individual wool fibre must be straightened and laid unbroken and parallel with the others if its maximum strength is to be given the fabric into which it is woven. The accompanying photograph shows the fibres twisted and tangled as they grow in the fleece. The strength and service of Kenwood Felts and Jackets demonstrate the efficiency with which the great carding machines in the Kenwood mill untangle and straighten these matted fibres.



The distinguishing mark of Kenwood Felts.

F. C. HUYCK & SONS
Albany, N. Y.
FELTS AND JACKETS



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High Grade Machine Finish and Super-Calendered Book Papers

CAPACITY OF MILL, 275 TONS OF PAPER PER DAY

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P

Canadian Bleached Sulphite

Mills: St. John, N. B., Canada

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Polar, Hi-Tone and North Star Coated Book Papers

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Paper Manufacturers

Carton and Paper Can Stock

Sulphite Bonds
Waxing Papers
Bleached-Specialties

Machine Glazed Plain and Watermarked Specialties

¶ One 100-inch Cylinder Machine, producing Solid Manilas, Single Lined and Double Lined Boards for Carton and Paper Can purposes.

¶ One 120-inch Fourdrinier Machine, producing Sulphite Bond, and Bleached Papers for special conversions purposes.

¶ Two 120-inch Yankee Machines, producing Machine Glazed Papers in Plain and Special Stock Designs, as well as Special Watermarks.

Daily Production, 200,000 lbs.

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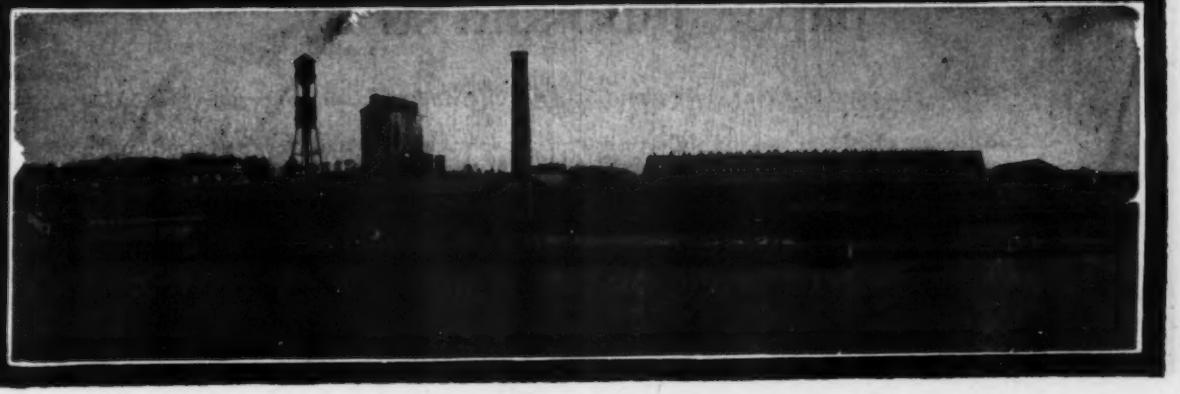

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handled economically with the

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YOU can unload and store coal and coke; reclaim from storage direct to boiler room, transfer ashes from boiler room to point of deposit—all with the services of **one man.** He unloads and stores from 3 to 5 cars in one day at an average power and labor cost of 5 to 7 cents per ton.

By substituting grab hooks for the conveying bucket, the same system can be adapted to handle baled rags, paper, pulp and straw.

Don't you want to know more about this flexible and efficient conveying system?

Write for catalogue or ask us to have our representative in your territory call and demonstrate the savings of a "Godfrey." This involves no obligation.

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By PENDLETON BECKLEY

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"I am the developer of the mind of children. As they thumb my inked pages, I teach them to spell, to read and figure.

"I am the life of the student and the breath of the scholar, for I have recorded and kept for them the wisdom of the ages.

"I am the church. In hymn, psalter and prayer I lift up my voice unto the heaven.

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"I am art, and I am architecture.

"I am the spirit of business, of banking and of finance.

"I am the telegraph and the cable, for I record the happenings throughout the world.

"I bear the tenderest messages of affection from loved one afar to loved one at home. I carry the consolation of friendly sympathy to those who mourn.

"I am the law, for without precedent upon me stamped, the scales of justice would not keep an even trend.

"I hold the plighted word of nations. It was because I was dishonored and trampled under foot that mighty armies unsheathed the sword in my defense, and thousands sleep in Flanders' fields where poppies grow.

"I am knowledge. Into the remotest places do I bring report of happenings throughout the world. The hovel and the palace alike hear my voice, and the dweller of the hovel becomes a ruler of men, and the dweller of the palace falls from high estate.

"I make public opinion.

"I am one of the foundation stones of civilization.

"My name is Paper."

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Let us know your needs so we can endeavor to help you.

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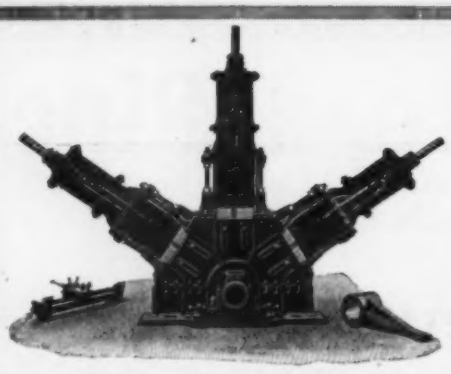

Standard Wood Pulp Grinder

Built in Three Sizes

Taking wood 24″, 30″ or 32″.
Bridge-trees—Are well proportioned.
Flanges—Made of steel, 40″ diameter.
Hydraulic Cylinders—Copper lined, 12″, 14″ or 16″ diameter.
Pillow Blocks—22″ length of bearing.
Pockets—Very heavy and designed particularly for free discharge of pulp.
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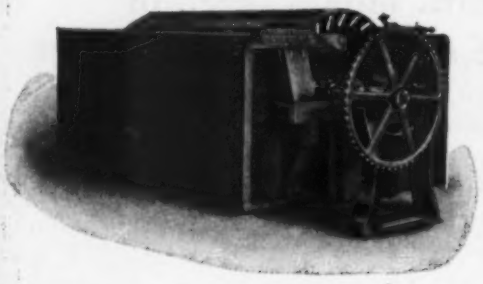

The Wood's Machine

Used as Pulp Thickeners, Savealls, Pulp Washers and Water Filters

ADVANTAGES:

Reduced Wire Costs	No Couch Roll
Enormous Capacity	Minimum Repairs
Only 2 H. P. Required	No Doctor
Works Automatically	Requires No Attention

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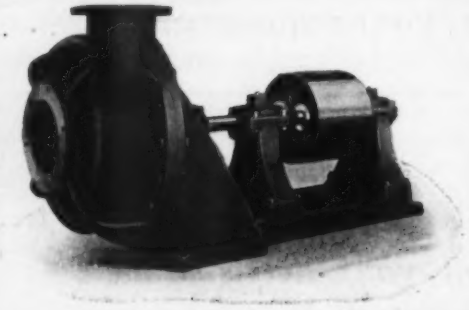

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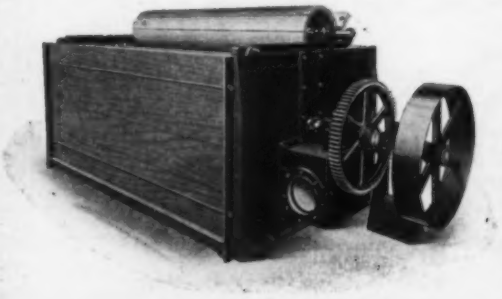
Impeller—Extra wide, enclosed type and perfectly balanced against vibration and end thrust.

Suction Inlet—Is of large area, giving a free and easy entrance to same.

Our Pumps are economical in use, simple in construction, of very great durability and discharge continuous steady stream.



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Built in the following sizes:
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Cylinder mould of best reinforced construction and properly supported with our latest design outside bearings.
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For Stability and Efficiency our Improved Deckers are Unexcelled

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LONG DISTANCE CONVEYOR OF WATER AND PAPER STOCK IN PAPER *and* PULP MILLS
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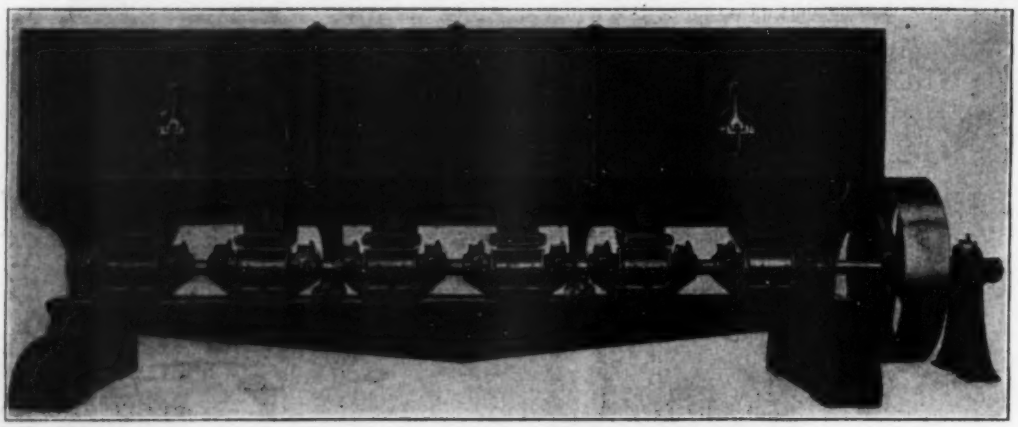
Pulp and Paper Mill Machinery



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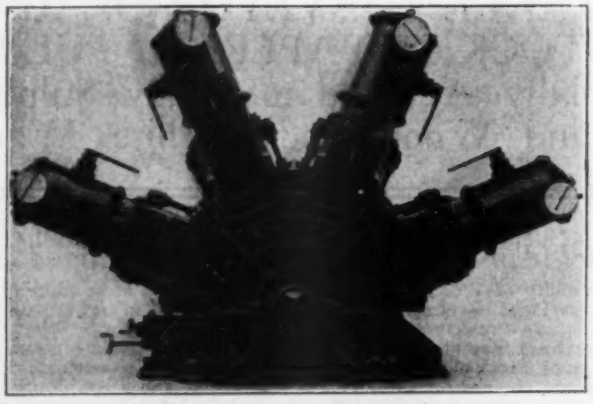
Manufacturers of **Screens, 3 and 4 Pocket Grinders, Wet Machines, Disc Barkers, 48″-84″-90″ Chippers, Centrifugal Pumps, Iron, Brass, Bronze and Lead Castings**



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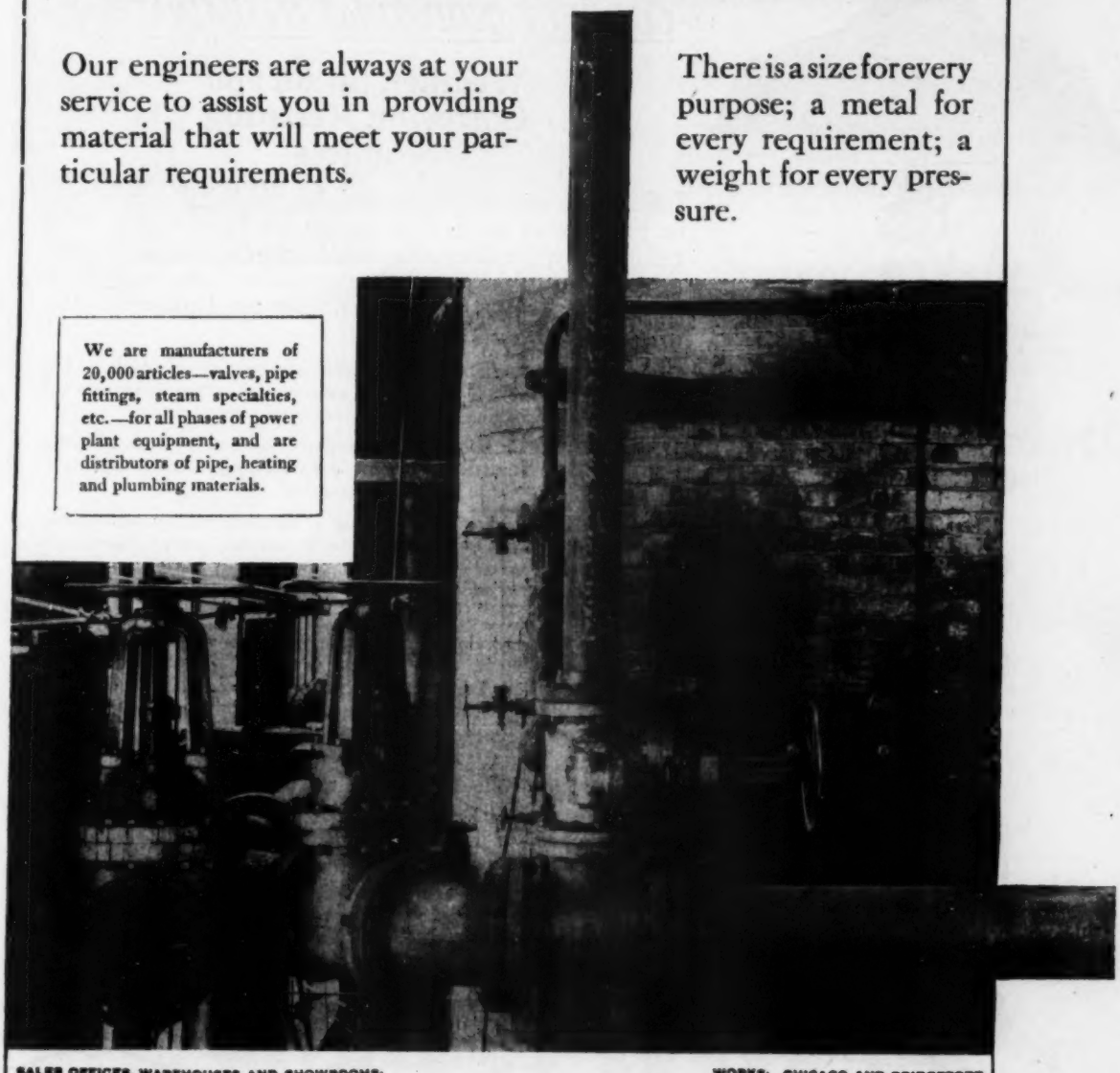
We are manufacturers of 20,000 articles—valves, pipe fittings, steam specialties, etc.—for all phases of power plant equipment, and are distributors of pipe, heating and plumbing materials.



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With X Type Fitting

Benjamin R. L. M. Dome Reflector Socket with X Type Fitting and Benjamin Two-Piece Easy-to-wire Socket.

Benjamin X Type Fitting

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The Illumination Equipment You Will Select When You Consider CORRECT INDUSTRIAL ILLUMINATION

Weather, Strain and Corrosion Resisting Seamless

Industrial executives, recognizing the vital part played in production by correct industrial illumination, will rightly give the deepest consideration to Benjamin Illumination Equipment. It is expressive of the best Engineering practice, upon which Correct Industrial Illumination is founded.

Benjamin Reflector Sockets faithfully represent these ideals. The Benjamin reputation is behind the assurance that this equipment will fulfill the most exacting Industrial Illumination requirement.

Benjamin Reflector Sockets Are Seamless These reflector sockets are unusual in that they are deep drawings from one piece of steel—seamless.

Porcelain Enameled The bare steel drawing is covered—two coats outside and three coats inside—with porcelain enamel fused on to the steel. The surface presented has highest illuminating values, is acid, gas, heat and moisture resisting—and is as easily cleaned as a china bowl.

The X Type Fitting Developed as the result of years of practical experiment. Plenty of bearing surface. Easily separated and reassembled. Binds the reflector firmly in place and resists the strain, corrosion and weathering imposed by outdoor conditions.

The Two Piece Socket All porcelain, very heavy and rugged in construction. Fitted with the Benjamin Lamp Grip which prevents the lamp bulb from loosening under shock and vibrations.

Through the special construction of Benjamin Reflector Sockets—all types—the lamp and all electrical parts are supported directly by the stem. This relieves them of all outside strain.

Benjamin Illumination Engineers will gladly confer with your own architect, contractor or jobber on any question involving this equipment or the subject of Industrial Illumination.

Write the Advertising Department, 800 W. Washington Blvd., Chicago

BENJAMIN ELECTRIC MFG. CO

Factories: Chicago and Desplaines, Ill.

Sales and Distribution Offices

New York, Chicago, San Francisco, Toronto, Canada; London, Eng.

BENJAMIN PRODUCTS

The following are divisions of Benjamin products on which we will be glad to send you information:

Industrial Lighting Div.
Electrical Division (including Benjamin Two-Way Plug)
Pressed Steel Products Division
Enameled Products Div.
Starrett Panel Board Division

BENJAMIN

Makers of Things More Useful

Armour's QUALITY PRODUCTS

Armour's Newest Plant and TROPICAL Paint and Oil Co. Products

Armour's newest plant in South St. Paul is the eighth Armour plant now using Elastikote, B and P Enamel and other Tropical products.

Armour's first order for Tropical products was placed in 1912. Each year since then, this nationally prominent concern, has reordered Tropical products.

There is only one reason for this preference. Tropical products are better! For many years we've specialized in protective and decorative coatings. We've perfected certain formulae for certain surfaces and conditions.

When will it be convenient for one of our representatives to call? He will be glad to make suggestions and quote prices on the Tropical products especially adapted to your particular requirements.

Elastikote

—is a Tropical product prepared especially for the protection of industrial buildings. It is not affected by smoke, fumes or gases. Send for sample sheet painted with Elastikote and test its wonderful elasticity.

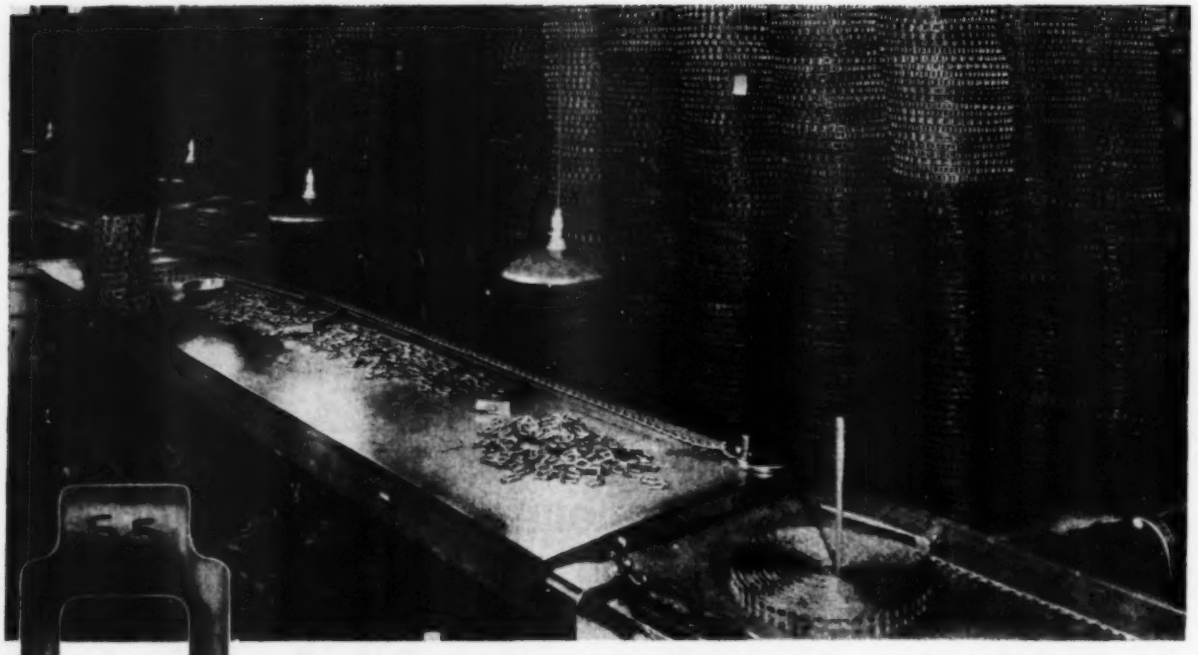
THE TROPICAL PAINT AND OIL CO., CLEVELAND

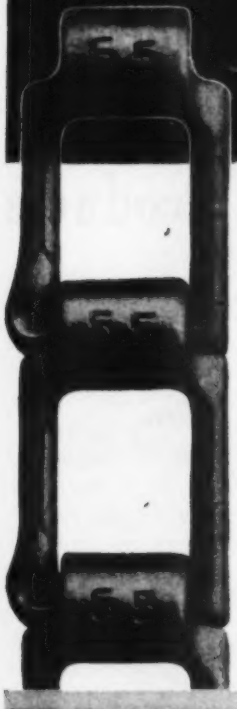
THE TROPICAL PAINT & OIL CO. CLEVELAND O. U.S.A.

TROPICAL

Paints—Enamels—Roofing Materials

Place Your Future Chain Orders Now!





IN spite of the fact that we have the largest plants in the world, with unequalled facilities for the manufacture of elevating, conveying and power transmission chains, at times it becomes almost impossible to keep pace with the great demands made upon us.

Every year sees greater expansions and additions to our chain plants. Within the last year we have installed two new furnaces, making a total of eight now running to full capacity, and additional facilities for annealing, cleaning, grinding, assembling and similar processes.

Yet, even with this greater production, we find it difficult to meet the demands of our trade as promptly as we should like. We are continually striving to better our facilities; to maintain our same previous good service.

We therefore suggest, in order to be certain of securing genuine Link-Belt Chains, that you place your orders for future needs at once. This trade mark >——< identifies our product.

591

LINK-BELT COMPANY

PHILADELPHIA — New York, 299 Broadway; Boston 9, 49 Federal St.; Pittsburgh, 1501 Park Bldg.; St. Louis, Central Nat'l Bank Bldg.; Buffalo, 647 Ellicott Square; Wilkes Barre, 34 Nat'l Bank Bldg.

CHICAGO — Huntington, W. Va.; Cleveland; Detroit; Kansas City, Mo.; Seattle; Portland, Ore.; Birmingham, Ala.

INDIANAPOLIS — Robson-Pritchard Bldg.; 429 Kirby Bldg.; 4210 Woodward Ave.; 906 Elmhurst Bldg.; 520 First Ave. S.; First and Stark Sts.; S. L. Morrow, 720 Brown-Marx Bldg.

TORONTO — San Francisco, 160 Second St.; Los Angeles, 163 N. Los Angeles St.; Toronto, Can., Canadian Link-Belt Co., Ltd.; Denver, Lindsroth, Shubart & Co., Barton Bldg.; Louisville, Ky., F. Wehle, Starks Bldg.; New Orleans, C. O. Hinz, Hibernia Bank Bldg.

Did You Get The Import Of These Messages?

What better proof of the importance of the four messages here reproduced could be desired than the knowledge that—

Leading Paper Manufacturers

—are listed among those installing Westinghouse Sectional Individual Motor Drive for Paper Machines? For instance:

West Virginia Pulp and Paper Company
Brown Company
Arrowhead Mills, Inc.
Abitibi Power & Paper Company

If you did not see all our advertisements, let us mail you the complete set, together with additional information of interest.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Sales Offices in All Large American Cities

Westinghouse

"WHEN YOU THINK OF PIPING,

THINK OF PITTSBURGH PIPING"

PIPING EQUIPMENT
FOR
POWER PLANTS

We furnish and install complete Power Plant Piping that makes reliable and continuous service possible.
Specialists in Welded Wrought Steel Headers, Flanged Iron and Steel Fittings, Pipe Bends and Fabricated Piping for Power Plants.

PITTSBURGH PIPING & EQUIPMENT COMPANY
MANUFACTURERS AND CONTRACTORS
PITTSBURGH, PA.

NEW YORK
220 Broadway

CLEVELAND
American Trust Building

BIRMINGHAM
American Trust Building

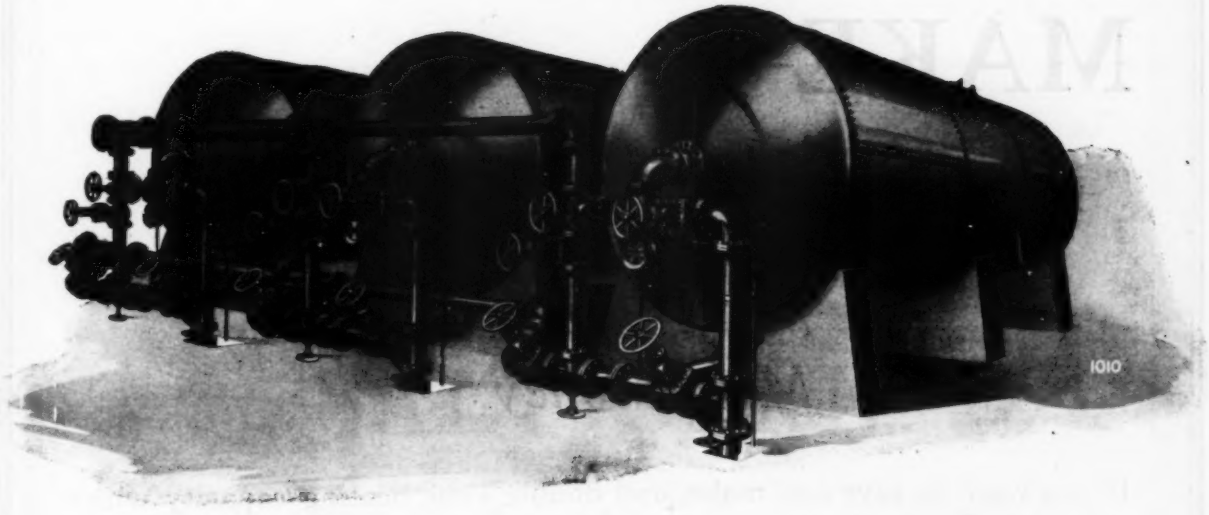
CHICAGO
Peoples Gas Building

INDIANAPOLIS
Traction Terminal Building

SAN FRANCISCO
Monadnock Building

GRAVER
Water
Softening & Purification
HEADQUARTERS

GRAVER *Filters*



Graver Water Filters will deliver properly clarified water to meet every demand.

Graver Service begins with filling your request for information, extends through the analysis of your water conditions, provides for the proper installation and starting of the correct equipment, and continues throughout the full term use of the equipment.

Write for further information regarding the various types of Graver Filters.

GRAVER *Corporation*

(WM. GRAVER TANK WORKS · FOUNDED 1857)

Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment

7-H

East Chicago, Indiana

SAVE—

Power, Labor, Worry,
Beater Bars, Jordan Filling

MAKE—

A Better Sheet
A Cleaner Sheet
More Paper
More Money

If you want to **save** and **make**, and double your beating capacity without erecting more buildings, and adding more machinery you can do so by adding one or more

Unkle Improved Extractors

Particularly adapted for Board mills or News Print mills, but will effect a great saving in all kinds of mills.

You can **save** and **make**, and learn much to your advantage, as hundreds of other mills are now doing, by writing or wiring

The Griley-Unkle Engineering Co.

General and Sales Offices: Lancaster, Ohio

Silicate of Soda

WE ARE MANUFACTURERS OF

SPECIAL GRADES FOR LINING DIGESTERS
SPECIAL GRADES FOR USE IN THE BEATER AS A FILLER AND FINISHER
SPECIAL GRADES *for* ADHESIVE PURPOSES
SHIPMENTS IN TANK CARS OR DRUMS

MANUFACTURERS OF

PRIME REFINED SALT CAKE

(CALCINED SULPHATE OF SODA)

SULPHURIC ACID
MURIATIC ACID
SODIUM SULPHIDE—*All varieties*

The Grasselli Chemical Co.

CLEVELAND NEW YORK
CHICAGO CINCINNATI BIRMINGHAM
MILWAUKEE ST. LOUIS NEW ORLEANS
ST. PAUL DETROIT PITTSBURGH

Largest Manufacturers in United States of

Basic Colors

As is well known, Basic Colors represent a group of dyestuffs indispensable to a number of industries, such as:

Cotton Manufacturing
Printing of Cotton Goods
Paper Manufacturing
Leather Manufacturing
Carbon Paper Manufacturing
Typewriter Ribbon Manufacturing
Printing Ink Manufacturing
Lake Manufacturing
Silk Dyeing
Cotton Printing

The types included in their manufacture represent such a variety as:

Du Pont Crystal Violet Powder
Du Pont Crystal Violet Base
Du Pont Methyl Violet NE
Du Pont Methylene Blue ZX (Zinc Salt)
Du Pont Methylene Blue B (Zinc Free)
Du Pont Victoria Blue BX and Conc.
Du Pont Victoria Blue B Base
Du Pont Victoria Green Small Crystals
Du Pont Victoria Green B Powder
Du Pont Auramine O and Conc.
Du Pont Chrysoidine G (Yellowish)
Du Pont Chrysoidine R (Reddish)
Du Pont Rhodamine B and B Extra
Du Pont Basic Brown BXN (Reddish)
Du Pont Basic Brown GX (Yellowish)
Du Pont Nigeria Black BX and GX

and the closely related:

Du Pont Phloxine B
Du Pont Rose Bengal
Du Pont Erythrosine B

The completeness of this group of dyestuffs will easily be recognized as of utmost importance to many industries. The purity of shade and strength represent the best that can be produced. The standardization is given the most careful attention.

Do not fail to see our unique display at Sixth National Exposition of Chemical Industries, Grand Central Palace, New York, week of September 20th. You are cordially invited to make our booths, 7 and 8, your headquarters.

E. I. DU PONT DE NEMOURS & COMPANY, Inc.

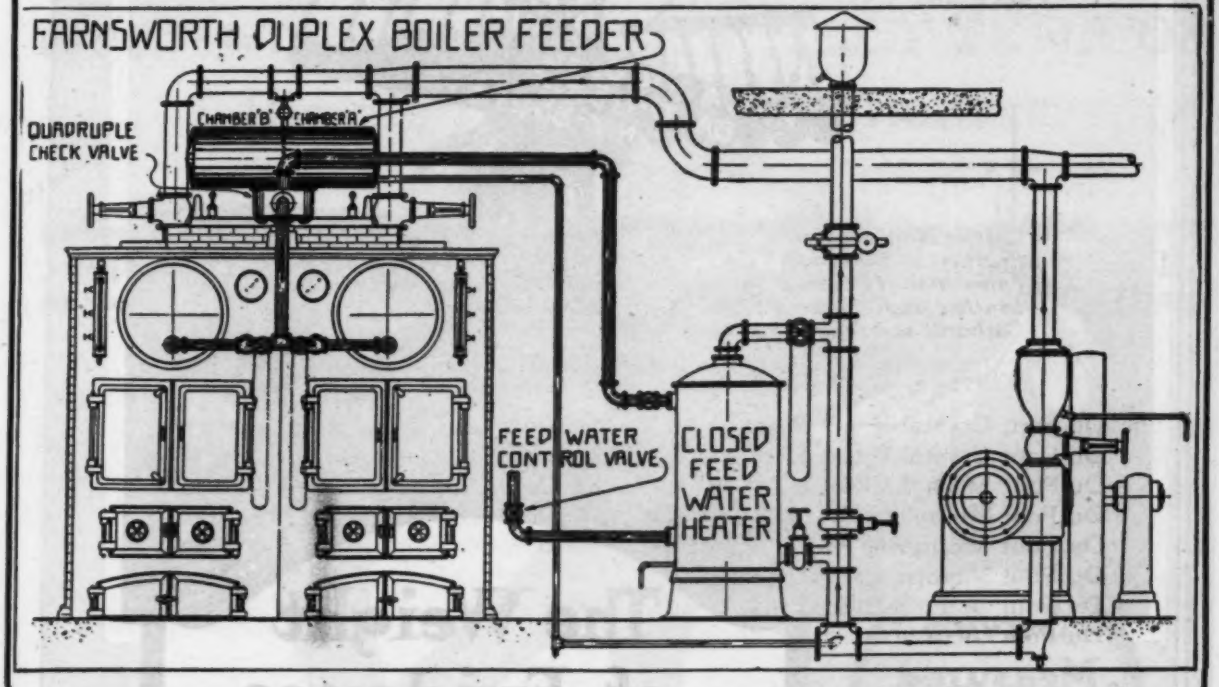
Dyestuffs Sales Department
WILMINGTON, DELAWARE

Branch Offices:

New York Boston Providence Philadelphia
Chicago Charlotte, N. C.

DU PONT DYESTUFFS

Why is the Farnsworth System the 20th Century Method of Feeding Boilers?

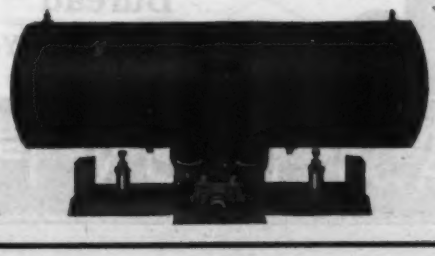


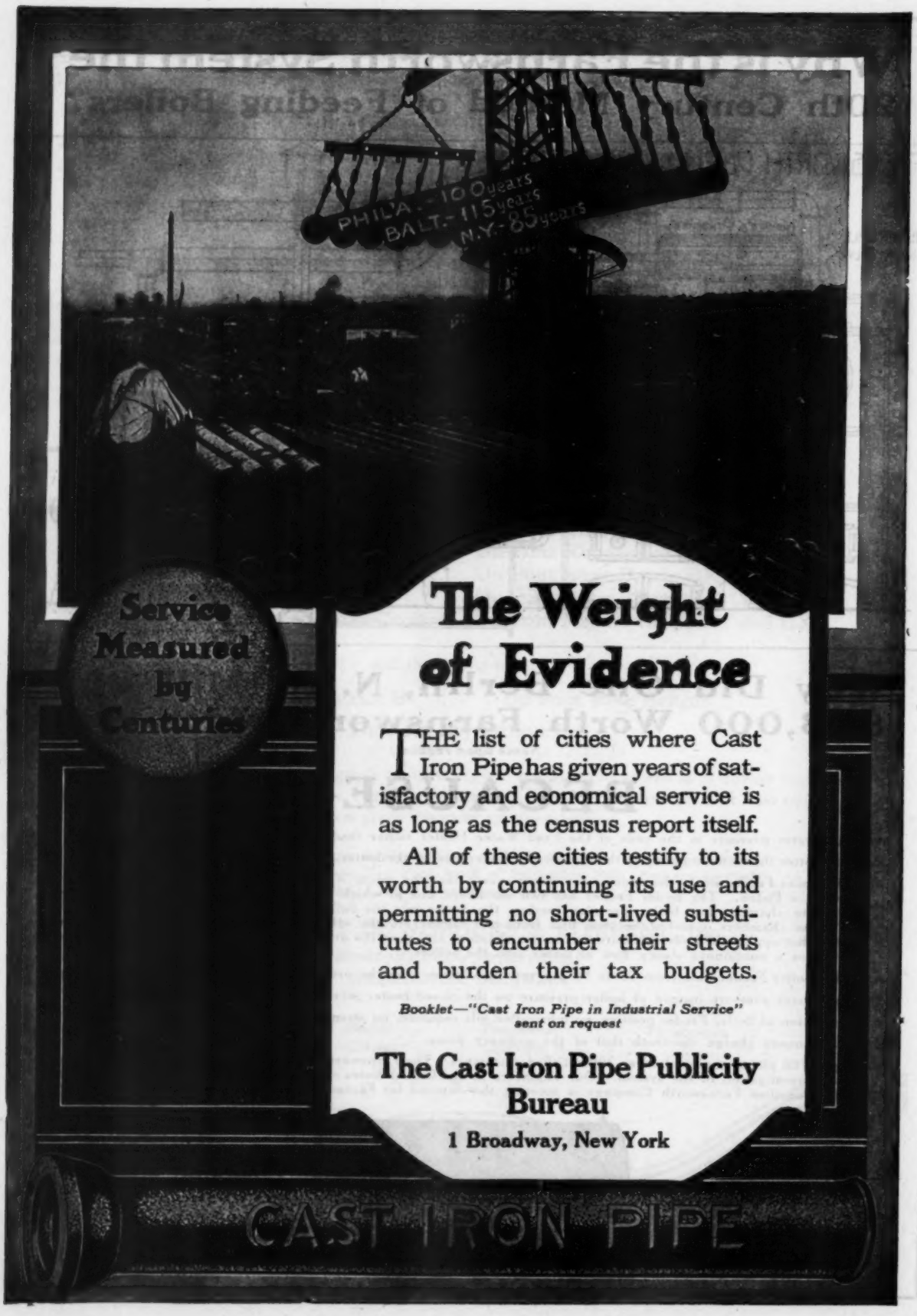
Why Did One Berlin, N. H., Mill Buy $93,000 Worth Farnsworth Machines?

(Name upon request)

BECAUSE—

1. City water pressure in the coils of the Feed Water Heater rather than boiler pressure.
2. The hotter the water supplied to the Farnsworth Boiler Feeder the better.
3. The Boiler Feeder works the same as any pump except that the steam is applied on top of the water instead of behind a Piston. The Boiler Feeder has two chambers, one of which is always receiving the water while the opposite chamber has boiler pressure feeding the water into the boiler. The alternate emptying and filling of these chambers operates the tank first from one bumper to the other which controls the steam and vent valve that applies the boiler pressure first to one chamber and then the other. The alternate filling and emptying provides a continuous steady flow of water into the boilers.
4. This Boiler Feeder uses from 75 to 90 per cent less steam than the ordinary piston or centrifugal type pump.
5. City water pressure instead of boiler pressure on the closed heater increases the life of the coils.
6. Operation of Boiler Feeder positive, no lubrication oils required, no attention.
7. Maintenance charge one-tenth that of the ordinary pump.
8. Over 700 plants equipped; over 700 satisfied customers. The Farnsworth Company, Conshohocken, Pa., solicits your investigation of the system. Our engineers in the United States and Canada. Request one to call on you. The Canadian Farnsworth Company is meeting the demand for Farnsworth Pumps in the Dominion.





The Weight of Evidence

THE list of cities where Cast Iron Pipe has given years of satisfactory and economical service is as long as the census report itself.

All of these cities testify to its worth by continuing its use and permitting no short-lived substitutes to encumber their streets and burden their tax budgets.

Booklet—"Cast Iron Pipe in Industrial Service" sent on request

The Cast Iron Pipe Publicity Bureau

1 Broadway, New York

Keystone Steel Split Pulley

OPERATES UNDER LOW BELT TENSION

Rivets That Can Not Shear

STRONG LIGHT

The beadless, turned-in-a-lathe rim makes the Keystone the best all-purpose pulley on the market. Uniformly balanced, it will successfully maintain its "rim truth" under high speeds and sudden strains.

The grooveless, oval crown provides an ideal surface for belt contact, insuring low belt-tension, less bearing friction, and less power loss.

DODGE

Dodge Sales & Engineering Company, distributor of the products of the Dodge Manufacturing Company and the Dodge Steel Pulley Corporation. General Offices: Mishawaka, Ind. Works: Mishawaka, Ind., and Oneida, N. Y.
Canadian Plant: Dodge Mfg. Co. of Canada Ltd., Toronto and Montreal

Philadelphia Cincinnati New York Chicago St. Louis Boston Atlanta Pittsburgh Minneapolis Dallas Providence Seattle Newark

The Right Paint for Plant Lighting

The right paint calls for materials in its manufacture which not only afford maximum lighting, but which through durability make for lowest ultimate cost.

If you buy Sta-White—the pure white oil paint—there is definite assurance that you will get full return for your money. It has a value demonstrated in service. If you buy low grade paint of unproven merit, your initial expenditure will very likely be lower, but your per year cost invariably will be higher.

When you paint it will pay you to remember Sta-White. It reflects and diffuses all the light, and it gives service year after year. It is one of the Degraco line of dependable paints.

Our book, "Lighting Industrial Interiors" discusses lighting and painting problems in practical detail. Write for a copy

DETROIT GRAPHITE COMPANY

Makers of
Paints in all Colors for all Purposes

503 TWELFTH ST. DETROIT, U. S. A.

Sold through Branch Offices with Warehouse stocks in all Principal Cities

Manufactured in Canada by
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DEGRACO PAINTS

All Colors for All Purposes

Constructive Salesmanship

By REV. GEORGE CRAIG STEWART, D. D.

(Presented at the Fall Meeting of the Salesmen's Association of the Paper Industry, on September 29, 1920, at the Edgewater Beach Hotel, Chicago.)

WE had a meeting of the clergy not long ago, and we had an advertising man speak to us about the "Spiritualizing Power of Advertising." The thing that impressed me most was the fact that the great advertising clubs of this country had reached the conclusion that the underlying fundamental principle in all advertising is that which religion has been trying to press home ever since its inception; that is, that truth and absolute veracity is the sign of successful advertising.

I come into a meeting of the paper industry, and I sit here and hear Polonius quoted, hear about the founder of the religion I have the honor to represent, and feel a spirit here that is indicative of that great movement that is going on in the commercial world that is going to make—and is the only thing that will make—for the salvation of the world. As far as outward appearances are concerned, there appears to be a thorough civilzation, but a civilization shot through and through with a paganism and a materialism that is thoroughgoing, and a commercialism that is often not very admirable. I feel that it is easy for me to speak against commercialism. I feel that instead of taking commercialism too seriously, we are not taking it seriously enough.

I realize when I speak to you men as salesmen of the paper industry—I realize that you are not in the paper industry for your great devotion to literature alone. I understand that you are not out as salesmen on account of some monastic attachment of any kind, or that the paper is used for great, glowing expressions of thought—you are in the thing for money. You are selling paper for money. Of course, you are in it for business reasons, but you know I am one of those who believes that the old idea that there were only three great, distinguished professions, that of law, medicine and the ministry, is passe. Alongside of our colleges of arts, medicine and law, we have now set up great colleges of engineering, also colleges of commerce. The time is here when you are not only going to have D. Ds., M. Ds., etc., but you are going to have A. Ds., B. Ds. and C. Ds. You are going to have Doctors of Advertising, Doctors of Business and Doctors of Commerce, as well as Doctors of Divinity and Doctors of Law, but the great thing is to press home that all constructive salesmanship must be business that is honest, kindly, helpful and that has time for the eternal values of life.

It is easy enough for one to talk along in a vague way. I want to say what I have to say in a very definite, pointed way. I understand that sometimes the theologian is interpreted by the business man as talking only in terms of religion. A Jew, the other day, a very earnest man, as Jews are, and a very keen business man, as Scotchmen and Jews usually are, was listening to a sermon. The minister in preaching this sermon came out very strongly and categorically, and said, "There is no hell."

At the conclusion of the address, he met Mr. Cohen and said, "I am glad to see you here."

Mr. Cohen said, "I enjoyed your service, but I have been troubled. I heard one thing that worries me. You said in your address that there isn't any hell. Do you believe that?"

"Yes."

"You don't believe there is any hell?"

"No."

"Then I want to ask you another question. If there isn't any hell, where is the business gone to?"

I don't mean to take, as Cohen took religion and interpreted it only in terms of business, your business and interpret it only in terms of religion, but I do want to say that the factors of constructive salesmanship in any field, so far as I have known, so far as I have experienced those factors of salesmanship, in my own vocation, are very clear, and definite, and the first one is this: that a man thinks. We used to have evangelists going around the country, saying that a man must be repentant.

The first thing in religion, salesmanship and business, after all, is to use that majestic, that marvelous development in man that has climbed up along the spinal cord and occupies that place in his head, to use that wonderful assembled inculcation of gray matter we have—I will not say the source, but the vehicle of that great universal thing which we have—the mind.

A Man Must Think

I remember, down in Dayton, the first thing that Mr. Paterson did in organizing his plant was to put in the office a great big sign in red letters, "Think, stop and think. Before you begin to try to put over this thing, think it through." You know that nine-tenths of the mistakes in business and moral mistakes come from thoughtlessness. They come from men who are swung off their feet because they are swung off their heads. I have noticed men in smoking compartments in trains talking with men from over the country. The first thing is to see what men in a group have really been thinking through any subject that comes up for discussion, whether it be the League of Nations, political questions or philosophical questions, whether those men have been

able to think the thing through or whether they have been satisfied only to read about it. There is something better than reading.

George Gibson will tell you that I am not altogether an opponent of books and reading, but isn't it a pretty wise thing to realize that the great center of efficiency is rejection, that the great center and source of efficiency in life is selection, is choosing and rejecting? The man who is successful in art and business is not the man who takes everything that is in his way. The man who is successful is the man who watches and brings his reasoning to bear, and takes the best. He is thinking and rejecting and accepting.

For instance, I have noticed that some people take a magazine and read everything in it, take the Saturday Evening Post and read it from cover to cover. That is an absolute waste of time. I have seen people that will pick up the Chicago paper and read everything right straight through. A man hasn't the time to do that. He is going to let his eye run down and see the things that are valuable and are necessary. That must be decided upon. In other words, do we not, in a way, become wise by the things that we do not know in the same way that we are healthy by the things that we do not eat? It is what we reject.

If I go to the drug store, I am not going to take everything in the drug store. I am going to pick out the thing I particularly need in my own particular case.

In other words, I say the first thing in good salesmanship for a man in reading is for him to select, reject, is to think. I am going to use seven points, mystical seven.

To Be Human

The first thing is to think. Second is this: to be human. Many great thinkers in the world have missed the whole point because they are not human. It might be said of them what was said of a great man, president of the United States, "He has the head of a Jove and the heart of a traitor. He loves humanity as a whole, but not as individuals."

If I were in a political discussion this morning, I would be able to defend my own mighty League of Nations, but I would be bound to admit that had there been behind the plan of bringing it forward more of a human touch with Nature as it is, with individuals as they are, we would not have been in the predicament that we are in today. I know men of perfectly gigantic minds who have made rotten salesmen because they didn't somehow take count of human nature and didn't love human individuals and did not know how to get in touch with the heart and life of every man.

Now, in salesmanship, there has to be that touch with human nature. You can't take human nature and cut it up categorically. You may be able to category men as producers, converters, jobbers, etc., but you know every one of us is an exception. Every one of us is a little different. You can't take people and group them.

I was in Georgia not long ago and as I went out, I thought of what Bill Nye said when he went up on Lookout Mountain. He had been told that if he went up on Lookout Mountain, he could see into four states. He had been told that he could see into Tennessee, Alabama, Georgia and one of the Carolinas. He got up and looked around and said, "Same old thing, sold again. Can't see into four states at all."

Someone said, "You certainly can."

"You can't fool me. I remember my geography. When I went to school it showed Tennessee as green, Georgia was red, Carolina was yellow and the other state was another color. I stand up here and I can't see these at all."

You know when you take the human race and divide it up, and when you get up into the real heights, the peaks, you see that you can't color groups like that. If you have an understanding of human beings, you have to deal with every individual as a human being, an individual, interesting, serious, wonderful, a person with whom you have to deal, and the constructive salesman is the one who takes account of that, figures on it, and includes it, and deals with the individual as a man, and then comes in all that your Chairman has said about development.

I remember a story of Sir Joshua Reynolds going to see a great picture. He looked at it, and was very anxious to do it justice. He said, "The shading is right, the light is right, it seems that the technique is right, but it lacks—the thing." What was it it lacked? It lacked that one something that made all the technique and all the drawing and all that, valuable.

Now, you have seen men, you know men, who are poor salesmen, who have good minds, who are well-dressed, honest. They lack "the thing." A rich, deep, glowing, powerful, human personality that goes out and gets a man, and that seems to me, in constructive salesmanship, is the thing that has to be developed. The second thing is human personality and human personal touch.

Honesty

The third thing that comes to my mind is this: absolute honesty. He is a poor salesman who thinks he can get by with anything that is absolutely crooked. I met a man once in a group who said, "We are living in a world where the man that gets ahead is the man that is shrewd and slick and puts things over. You watch, and you will see that it is not the man who is honest that is going to succeed. It is the man that is shrewd and cunning and covers up his tracks."

Do you know what I said to that man? I said, "I can allow that a man is a Presbyterian or an Episcopalian and yet is a fine fellow whom I can respect. I can admit that a man is not a Christian and yet take

off my hat to him. But when I meet a man who says what you have just said, that a man who is crooked is the man who succeeds and further than that, that the man who is honest does not succeed, I submit that that is the supreme infidelity of the race. You would turn us all over to skullduggery, and I want to say that your type is a menace to the whole human race."

That is the last skepticism, that is the last infidelity, because it wipes out the whole universe of righteousness and commits us to a great diabolical scheme. To be honest—that is the scheme, and if any fellow is dishonest and gets ahead and makes some money and gets promoted and seems to make good, what am I going to do? I am just going to laugh to myself and say, "The worst thing that ever happened to a rogue is to succeed because the final end of every hog and pig is the abattoir. The end of every crook is hell's own experience."

Do I envy that man? The joke is on him, not on me. Like a man who was going along the street. A big Irishman was coming along and knocked him down and said, "Lie there, you damned Swede."

The man lay there and started laughing. Someone said, "What are you laughing about?"

"Oh, I haf got a great joke. He called me a Swede, and I am a Norwegian."

The fellow can afford to laugh. When a crook thinks he is getting by, the joke is on him. The constructive salesman is the man who is absolutely square and absolutely honest.

Be Clean

The next thing is this: be absolutely clean. It was my pleasure to serve, not here alone, but in France, as a chaplain. I saw ninety-two men operated by one surgeon in a night in the Argonne. I asked him what the great power of modern surgery is. He said, "Very simple, a very simple discovery, the supreme importance of cleanliness." That is the big thing.

One of our leading surgeons was asked what was the supreme factor in his success? He said, "Clean finger nails, clean hands."

What is—I say it quite guardedly—the supreme test of a man's character? Some people say a man's character is what he is in Paris. The supreme test of a man's character is what he is when he is alone in New York. The test of a salesman's character comes when he is alone in a big city. Be clean. You know it is a strange thing, but sexual integrity is somehow strangely tied up with invincible personal power and control over other people. That is a strange thing, but it is true. You will always find it so. Be clean. The man who is clean, somehow has that power and gets across and grips people and moves people, and after all, I am sure all of us who are married have found this to be true: when all is said and done, the wife isn't a mere mistress or waitress or housekeeper or partner or helpmeet; she is all of that, but beyond that, something beyond that. We have all, I think, found this, the experience of every great happiness in life is the shadow of a great loyalty. That is my experience; that the happiness that comes to us as Americans, is somehow, in itself, the shadow of a great loyalty to our flag and our country, and certainly as men and salesmen are put to the test, the great happiness that comes to a man is in the shadow of a great loyalty to the woman who has honored him by becoming his wife. Be honest and be clean.

Work

Then, I think I would say this next thing: I saw a cartoon, the picture of the Success family. I can't remember all the details, but the father in the Success family was Hard Work, the mother in the Success family was Thrift and the children were named Cheerfulness and Tact and Persistence, Punctuality and the rest of them, a great family, but down at the bottom, the cartoonist put this note, "If you get acquainted with dad, you will very soon know all the other members of the family," and dad was Hard Work.

And I suppose the next rule in constructive salesmanship is work. I suppose you find it in your organization, as I find it in mine. We are salesmen. We are out selling the principles of the Kingdom of God. I find you get men that are scholars, men that are clean, men that are thoughtful and all that, and yet men who, confound it, when it comes right down to hard work, are lazy, who won't work. The constructive salesman is the man, after all, who has to get into the game, and as your Chairman said, has to keep his head cool and his feet warm in getting around.

Now, I am going to hasten on from that. That is just an outline.

Teamwork

The next thing is teamwork in salesmanship. It is a wonderful thing in an organization. Remember, it is teamwork. It is not the individual who carries the thing through; it is the team. Our team at the university is planning for a fall campaign and in every game we win, everybody on the team gets part of the praise, because they all shared in putting the thing over.

In any mill, in any organization you have represented here, it isn't the individual, it is the one who can work with others, who is not the extreme individualist, who fits into an organization, who doesn't want to claim the whole thing for himself, who is willing to sit back if only the order can be gotten. It is not a question of individual selfishness; it is a question of the team getting together and every fellow being willing to sacrifice himself if only somehow the team he represents can win. It was that way in winning the war.

I am not going to delay you this morning in speaking about the war, but you remember, you under-

stand, that we very nearly lost the war. Why? Lack of teamwork. It wasn't until you got the laisson in the front line, until you had the S. O. S., until you had England and France and America, each one of them willing to give up and have a chief over them, and how it hurt the British to have that chief over them that wasn't a British marshal, how it hurt the British to salute Marshal Foch, but how they said, "We are not in this thing for glory, we have to get together and win the war." When that came to pass, victory was almost achieved, and it is only when a man loses himself in his cause, believes so thoroughly in the thing he represents that he is willing to cut out his personal achievement, that it is success in any large way.

Success, then, is really teamwork. Men who make the biggest successes are men who know the value of teamwork. I mean such men as George Perkins, who started as a salesman in the insurance business and became one of the greatest salesmen in commercial life.

The Universal Spirit

There is one man in this city who put over his desk a big sign, U. S. A friend of his said, "Well, I see you are very patriotic."

He said, "Well, just between you and me, that U. S. stands for something more than United States. That U. S. stands for the United States, but it also stands for the universal spirit, the infinite universal spirit of truth and wisdom and righteousness and power. I am part of it, and I realize that my business isn't mine, it's His. I realize that the power and the health I have isn't mine, it's His. I am His child, and one of his workers. Man is not running on his own power, he is running on the universal mind. He is tapping those universal sources of power. Each one of us possesses a certain wisdom.

There are those seven points, that a man think, that a man be human, that a man be honest, that a man be clean, that a man lose himself in his cause and come in for teamwork, that a man be conscious that he is, after all but a sharer with all other forms of life in doing the Infinite and Eternal Will and of coming to mean not merely a business proposition, but by going into a community and out of it, leaving something of himself that makes for beauty and sweetness and light and goodness in that community, so that when he comes again, people will say, "Here comes not only a representative of a paper mill, but here comes another bringer of light and power in this community."

Ascertaining the Correct Amount of Rosin and Alum Used

By HARRY C. BRADFORD

ROSIN is most generally bought in a liquid form as prepared size and stored in a large tank. The size has to be diluted with water—at least it should be to get the best results, more especially where a high percentage of free rosin is used. The tank in which the size is diluted is filled to a certain mark with water, and the size from the storage tank is run off into a measuring tank and then pumped into the mixing tank. This means a gallon of diluted size containing the same amount of rosin. In case of doubt, a small sample can be evaporated to dryness. To do this, take a sample from the measuring tank and evaporate it to see how much it will lose; then take this in consideration when making the test just mentioned above. After the size is diluted with water, it is pumped into a storage tank from which it runs into a measuring tank in the beater room. By the aid of a float, there is marked a scale on the measuring tank, or, in other words, so many inches makes a gallon of size. In some places this is reported as so many inches of size and at others so many gallons. An account of the number of measuring tanks of size used is reported every day and other mills generally once a week. Knowing how many pounds there is to an inch, you can compare this with your beater reports, which will show any discrepancy if there is any.

ALUM REPORT

Daily

Date_____ Mill No. _____

No. Sacks Used _____

Pounds Per Sack _____

Total Pounds Used _____

_____

_____

_____

Signed _____

Form No. 1

Alum

Alum is mixed with water in a large storage tank. You should have a report each day of the number of sacks used. See form No. 1. This report should be made out by the man mixing the alum. Alum is usually made up to a certain Beaume test (about 18 to 20), so sometimes it takes more pounds of alum to bring it up to this test than others.

The beater engineer should report the number of gallons used in each beater on each order. See form No. 2. The man who mixes the alum should take an inventory of the amount left in the tank each morning. You can figure up the amount of gallons reported and divide this into the number of pounds of dry alum used, and you will have the number of pounds of dry alum there was in a gallon for the day before. This should be noted on the beater report and used when figuring the cost of the order. A permanent record should also be kept of this (form No. 3) and compared day by day. Here is a place where a cost accountant can save many dollars per day. Suppose, for example, that a gallon of alum has been taking 4 pounds of dry alum to bring it up to the Beaume test (you will find that it will not take

Form No 2

BEATER REPORT

DAY
NIGHT

BEATER NO. DATE 191

ORDER NO. MACHINE NO.

FURNISH				BEATER NO.	TIME	
RAGS						
BL. SULPH. DOM.						
BL. SULPH. FOR						
BL. SULPH. OUR						
UNBLEA. DOM.						
UNBLEA. FOR						
SODA PULP						
M. C.						
G. P.						
CLAY						
STARCH						
SIZE						
ALUM						
FILLER						
SILICATE						
COLOR						

REMARKS

SIGNED

SIGNED

4 pounds of good alum to make it test 18 to 20), when it raises, so they are using, say, 6 pounds to make a gallon of liquid alum, you will know there is something wrong. This should be called to the attention of the superintendent. Two pounds of extra alum in a gallon does not seem very much, but supposing that you use 500 gallons per day, then 1000 pounds more of alum is used than what is needed, which at the present market price would amount to $40 per day. You should have a good measuring tank to use in putting the alum into the beater. There can be strips nailed on the inside of the tank, each strip designating so many gallons.

Report on Alum

	Jan'y	Feb'y	March	April	May
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
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20					
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22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Form No. 3

Sweden's Paper Industry

That Sweden's paper industry is built up on the highest basis of efficiency as known in American paper mills, but that its lumber mills are not up to American standards was the declaration before the convocation of the New York State College of Forestry at Syracuse by Henry M. Meloney, returned after a year of intensive study of forestry conditions in Sweden. He was honored by the Scandinavian-American Foundation with selection as one of the first Americans to go to Sweden in exchange for a Swedish forester. In speaking at convocation of the forestry college he was addressing students who were freshmen when he was in the graduating class of the college. His talk followed an address by Axel E. F. Schard, the Swedish forester who was sent to Syracuse in exchange for Meloney, and who spoke on American forests as seen by a European the previous week.

Mr. Meloney told of the manner in which the Swedish paper manufacturers get their timber to the mills, and of the machinery used to convert the forest into paper. He said that Sweden relied largely upon its forests for its export industry, and described in detail some of the mills he visited. He said it cost only about 26 cents per log to get a saw log from the forest to the mills at tidewater.

The Financial Situation in This Country

By HARRY E. MERRICK
President of the Great Lakes Trust Company

Presented at the Fall Meeting of the Salesmen's Association of the Paper Industry, on September 29, 1920, at the Edgewater Beach Hotel, Chicago.

WE have had all sorts of prophets, whether you spell it p-r-o-p-h-e-t-s or p-r-o-f-i-t-s, whether you call them excess profits or damn-fool prophets. No man can tell in this post-war period just what does lie ahead, either for a few months or for the next two years. There are some fundamentals and it is worth while to take them into consideration. It is a strong trend toward pessimism, not only among business men, but the population at large. We are rather a mercurial people. Our pendulum swings in a greater arc than that of any other nation. We have proven that in the years succeeding 1917. It is only seven months ago when the pendulum of prices and apparent prosperity was at the highest mark on the arc. I believe today that it is at the lowest, and that from that very point it is only possible to rise. I am an optimist. I imagine that most of you men think of a banker as inherently a pessimist. The wise prophet today, if he wants to justify himself, takes the attitude of pessimism because manifestly if you start from the premise of pessimism and build from that up, there is only one possibility and that is success in your prophecy. If you say that things are at the worst and that that worst condition is going to continue for an indefinite period of time, then as a prophet you justify yourself because when it improves, every one pats you on the back and says, "Old man, that's fine."

Now, these subjects that you are to discuss this afternoon all bear upon finance. I spent twenty-one years of my life with Armour and Company as general manager of credits. Some twenty-five years ago, I spent three years in Canada with a company producing considerable amount of pulp wood. I do know a little about your industry, but not much. I do know that this present situation is a thing you are interested in.

Our friend, the cartoonist from the Chicago Tribune, published a cartoon several days ago, that appealed to me very strongly. You may remember it. It represented the top of a very high building, presumably twenty stories in height, and on the roof there were two men tied together with a rope. One chap was on the parapet just about to leap and he was marked "Prices." Another chap was marked "Prosperity" and he had the rope around his waist to which the other man was attached, and his expression was somewhat excited. His hair was beginning to stand on end. He said to the other chap, "For God's sake, don't jump. Let's walk down."

Men Who Jump

Some of our enthusiasts who at times in the last ten or twelve or fifteen years believed that the Lord had descended upon them have chosen to jump and one of them is Henry Ford. He has seen fit to jump when it wasn't necessary, and he came out with a statement that I don't believe is wise. I don't believe it is justified. Unfortunately, we have in Washington men—in the various bureaus and even in the Cabinet—who seem to be of the opinion that it is wise to cheer on these men who jump.

The one thing to do is to depress prices and in that one way lies prosperity. About four weeks ago, I telephoned Mr. Meredith, Secretary of Agriculture, who hasn't been in Washington long enough to lose the business touch with the United States, a man in whom I have a great deal of confidence. He happens to be the editor of Successful Farming, one of the largest agricultural magazines in the country.

I asked Mr. Meredith to give me an analysis, up to the last minute—not government statistics, but up-to-the-minute stuff—by wire, as to what our condition was as to the standpoint of agricultural values, what we had in the way of assets.

Washington, for the last nine months has emphasized only one thing and that is liabilities, and somehow, inasmuch as I was born here in the United States, I am somewhat interested in the other side of the ledger. As a banker, I am interested more in assets than liabilities, and it seemed to me we couldn't be so absolutely "busted" as Washington had given out.

Value of Farm Products

Mr. Meredith, after thirty-six hours, during which time he had his experts at work on the last minute stuff, sent me a telegram of about 850 words, and in that he gave the last word that could be sent out from the standpoint of values. That message was this: Analyzing the crops one by one, wheat, corn, oats, rye, apples, potatoes, etc., the total value of the farm products of the United States, in this year and 1921, at prices now quoted, was only twenty-six and a half billion dollars.

Now, that is a very sad condition, gentlemen, it is time to weep.

I took that message and went to Mr. Gates, the President of the Board of Trade, to George Marcy of the Armour Grain Company, to Mr. Rosenbaum of the Rosenbaum Grain Company, the three men who know, and they told me that they thought Meredith's estimate was decidedly conservative; that their own figures were somewhat in excess of his. Then two of those chaps sat down with me for an hour and figured out for me that the exportable surplus of

grain in this year, 1921, amounts to the measly sum of seven billion dollars.

Then those three men told me—and it was verified by Julius Barnes, President of the United States Grain Corporation, which administered the grains during the war period—that the foreign demand for our grains which these men had given to me as approximate was far in excess of our ability to ship. In other words, they expressed the opinion that between now and the first of March, on account of the urgent demands on exports of grains for foreign governments, we might have to have governmental control in the matter of stopping shipments in order to keep a sufficient supply for ourselves, and that that is true, even now when the exchange on pound sterling is $9.86, as against $4.86 normally.

Now, I am not going to flood you with statistics in this brief talk. It is worth while to remember, however, that twenty-six and a half billion dollars' worth of value produced. That is apart from the live stock. I haven't had any figures on the live stock. This is on crops.

Washington has told about this condition, over and over again, through the mouth of the Attorney-General and through the several Secretaries of the Treasury whom we have had in the course of the past nine months. Has there been a change today, gentlemen? I haven't had time to consult the statistics. I don't like to refer to that, but I think Houston is still Secretary. He was last night. He, by the way, is an agriculturist. He doesn't happen to be a busiman or a banker. He is Secretary of Agriculture. He was promoted because he is a man presumably who understands international finance, and Houston has emphasized in every address he has made, in every published statement he has issued, the one fact that we must maintain this taxation scheme, excess profits and income tax. Why? Because, by God, we had twenty-four billions of dollars of indebtedness.

Matter of Liabilities

I understand that you men are sales managers. Some of you deal with credit managers. Some of you occasionally refer to a chief accountant. How many of you would maintain upon the payrolls of the concerns with which you are connected a man who showed only a liability without a corresponding asset? The indebtedness of the United States is twenty-four billions of dollars on the last available figures.

The accounting department of the United States Government has a little flow in the matter of liabilities as it has in its consideration of other matters, so there is always a lee-way of two or three billions of dollars. That isn't a matter of any moment. Trial balances are not required.

The last figures are twenty-four billion dollars, as published last week. As against that, there is an asset of twelve billions of dollars, ten billion seven hundred million, approximately, due from foreign governments and accrued interest. One-half of that sum is secured by the deposit of securities pledged by the foreign governments during the war to secure these loans.

There is a little matter there you will notice, that five per cent or six hundred million dollars a year in interest is piling up. I am not much of a mathematician, but it seems to me that twelve deducted from twenty-four leaves twelve, as I figured. If that is so, you have a net indebtedness of twelve billion dollars, and twelve billions of dollars deducted from the crops for this year leaves fourteen billions of dollars in excess of crops over and above enough to pay the national debt if we were in process of bankruptcy. On that theory, I believe, I would pay, if the stock of Uncle Sam and Company were in the market, about six hundred dollars, on a basis of a par value of a hundred dollars.

Here is a business firm, gentlemen, having stockholders, 106,000,000 of them, which has assets of about six hundred billion dollars—a hundred more or less, doesn't cut any ice in this country—and it has net liabilities of twelve billion. What will you sell your stock for?

A State of Mind

Now, the question is, What is the matter with us? It is largely, I think, a state of mind. We suffer from a state of mind here. In 1914, we suffered from a state of mind called, "He kept us out of war." In 1917 we suffered from another state of mind which Theodore Roosevelt pointed out. Some of you may be Democrats and I don't want to hurt your feelings. I am a Republican. It is time for you who are Democrats to reform.

You know, I haven't any particular religion, but the Bible is about as good reading as I have ever encountered from the standpoint of horse sense. Entirely apart from religion, there is a biblical saying that "There is more joy over the one sinner that repenteth than the ninety and nine gone astray."

During the war period, they told me a story that rather tickled my sense of humor. Maybe it is distorted. An American ship put out from the port of New York just before the armistice was signed, and there still was danger of submarines, floating mines, etc., and upon the bridge of that ship the captain paced back and forth, feeling his responsibility for the crew, for the few passengers he had and for the tremendously valuable cargo, and fearing, as he looked, that something might happen, that he might strike a mine, might be torpedoed, might have an accident that would wipe them out, and under those circumstances, the steward, who sometimes stuttered, rushed up to the captain and said, "C-c-c-c—." The captain said, "For God's sake, sing it."

Thereupon, the steward burst into song, "Should auld acquaintance be forgot, and never brought to mind; the bloomin' cook's fell overboard, and is twenty miles behind."

Then I heard a story concerning a ship that put out from the port of Brest before the armistice. Upon that ship there was a Frenchman who had done most of the things he shouldn't have done, and left undone most of the things he ought to have done. At midnight, when at sea, the ship was torpedoed. This Frenchman rushed on deck and found the boat sinking. The waves were washing around his feet, and there was nothing ahead but death.

Being a Frenchman—we Americans always know what to do—it occurred to him that the only recourse was prayer. He never had prayed, and he had no prayer. Nevertheless, he sank to his knees in the swirling water and put up his hands to the sky and said, "Oh, God, if there be a God, save my poor soul, if I have a soul, from going to hell, if there is going to be a hell."

That seems to be the attitude of a good many men during the last two years and especially during the last six months. What has brought this condition upon us? I believe three great factors, and you are going to hear about them in detail from men who can speak to you with authority this afternoon. I assume from your chairman's statement of the program that the first and foremost is transportation. I am not going to deal with that in detail. It is a subject that you have before you later on.

Unbalanced Inventories

However, as a banker and a business man, I believe that that has been the greatest factor in producing the two great difficulties with which we are now laboring. The one was an unbalanced rise in price, and coincidentally with that, an unbalanced condition of inventories, as in most industries. You men in the paper business didn't have to struggle with that because the demand was always in excess of the supply, but in all other lines unbalanced inventories prevailed during the last twelve months, and still prevail, even under this condition of pressure.

The average manufacturer, jobber, retailer, even the farmer, had an accumulation of stuff that he either couldn't ship on account of lack of cars or he had built up his inventory in unbalanced fashion because of his fear that he couldn't get supplies within a reasonable time and he wanted to prepare himself against eventualities.

It resulted in the average man ordering about three hundred per cent of what he expected to get, and the time came when the accumulation of orders backed up on him both ways. It resulted in the average individual laying in a barrel of flour and a sack of sugar, if he had money enough to pay for it, for fear he might not get it if he didn't follow that course.

When the bubble burst, in sugar, the price went down from twenty-seven cents to a present retail value of fifteen cents and an actual wholesale price of thirteen cents. Some burst in price! There were two factors which entered into the sugar world. One was the fact that our national administration didn't consider it the part of good policy to buy the Cuban sugar crop at six and a half cents, and Great Britain did consider it good policy, so we paid twenty-seven. The reason, doubtless, for that little business oversight was that there was a nation called Armenia in existence, and has been for several million years, and has always been in trouble, and the President believed we should bind up the hurts and wounds of Armenia and forget our people at home. We are still in that position, in that our eyes are turned, officially, toward Armenia and away from the United States. That condition, I believe, will be corrected.

Of course, being a Republican, I believe that condition will be corrected by a Republican administration. Even if we elect Cox, we shall have a business man. Cox is a business man and we will have a new deal. We shall have men in the departments, men in the cabinet, whichever way the vote shall be cast, who will give us better conditions from a business standpoint than those under which we have suffered.

Transportation

Transportation: You all know what that condition has been. Mr. Whitely tells me you still labor under it in the paper industry, because you need a better grade of cars, that you must provide against bad orders of cars, cars that leak, while some lines can take them, and unfortunately a large proportion of our cars are not in first-class order. I imagine you all noticed the official car service report of the United States for the month of August. It is well to remember that the car service report put out by the Interstate Commerce Commission showed the greatest movement of loaded cars in the month of August in the history of the United States; something like twelve and a half per cent greater movement of cars than in any month during the war period. That condition continues in September, so several of the railroad presidents tell me, and they believe September will show an improvement over August.

There is a little family fuss down at Washington, as between the several committees charged with administration of our affairs, over a fund of $300,000,000. This fund is known to be a revolving fund to be loaned to railroads unable to secure sufficient money for replacement and repairs. Up to date, sixty million dollars has been used. For the last four weeks none has been used on account of departmental dispute.

Out of those funds, the funds of the banks and the funds of the great public, will come one of the factors for restoring business, for the railroads are measured in hundreds and hundreds of millions of dollars, in fact, measured in billions.

We have the money to supply that when we unlock these closed credits. Therefore, to my mind, the condition of transportation is not as serious as we were told it was in April. My friend, Mr. McAdoo, thought that the way to save this country was to

create a bureau and have the railroads owned by Uncle Sam. He didn't have to pay. He just took them. It was not necessary to do anything but just go ahead in a happy fashion, the same as they do down in Georgia. It was just the same when he built the Hudson tubes, but didn't have the money to finish them.

Some of us didn't believe in the Plumb Plan. That was simple. You simply turned the railroads over to the labor men, and McAdoo said if the railroads were turned back on the first or the thirty-first of March, the periods set under the resolution, that there would be utter chaos and disaster; they never could again be successful.

They were turned back on the first of April, with the car equipment scattered to the four winds of heaven, with the cars in the worst condition that had ever confronted the railroads, and with a market that was unable to float anything. From the first of April until the first of September there were strikes and everything, plus the Adamson Law, which was kindly handed to us. Nevertheless, we brought out of that chaos a condition that shows the best movement of cars in August that the United States has ever known.

Labor

The labor situation I won't comment on. Personally, I believe in the open shop. I have always worked under the open shop. I believe we are coming on the open shop rapidly. I am told by men who know, some of the greatest employers of labor, that they think the results in the last sixty days show an improvement of ten to fifteen per cent in efficiency in labor outturn. I asked one of those chaps connected with the United States steel industry whether his survey made him believe that the individual had suddenly realized his mistake and was working more efficiently. He said he didn't think that was the big factor. The big factor was when the gates opened on Monday morning there was a big supply of men who belonged on the pay roll and worked eight hours a day until they tapped the bell on Saturday, whereas those men worked when they damned chose and not much of that.

That is the great big factor that makes for our future prosperity.

Finance

Finance: I am just an imitation reformed stock yards man. It is rather popular right now to assail the banks, to publish editorials and otherwise call into the public eye the profiteering methods of the banks. It is a highly profiteering game when you loan money at seven per cent and you borrow money at seven per cent, and the difference between the seven per cent at which you borrow money and the seven per cent at which you loan money represents your profit on the transaction.

Now, unquestionably, the Federal Reserve Banking System saved us from a panic in 1914 and probably a panic later, last winter. I believe we would have a condition equivalent to 1907 if we had not the Federal Reserve Banking System. Whatever weaknesses —and some people believe weaknesses in that system exist—can be cured during the next Congress, and I believe will be cured. The men who control that system are among the best in the United States. I think that many of them feel that certain conditions in that system can be corrected to the best good of the system and to the United States, but we are working now with 43.29 reserve and if you industriously read the financial sheets, and if you read the stock tickers, as unquestionably you do, you will notice the sway of that reserve.

There was a dangerous condition last week, a tremendously dangerous condition. It went down to 39.8 per cent of reserves. Over in London there is an institution commonly referred to throughout the world as "The Old Lady of Threadneedle Street," otherwise known as the Bank of England. She has been a fairly industriously profitable old lady since your father's time and mine and ordinarily considered solvent, and a note of the Bank of England has about the same value in the currency of the world from the standpoint of stability as a note of the United States Government, and the Old Lady of Threadneedle Street through the war operated on about nine per cent reserve. In the last six months she has been operating on ten to twelve per cent and doing nicely, thank you. She has not had chills, hasn't sent for a doctor, hasn't told the world of her condition, and on the other hand, has praised God she had twelve per cent and done business on that.

Last week we touched a low mark, thirty-nine per cent. The comparison there is about a pound sterling worth $3.49 as against our five-dollar bill. The five-dollar bill is still worth five dollars, and in some countries it is even worth $6.10, and in two or three countries it is worth about $20. Awful conditions, aren't they? Don't you think it is time for you to weep? Don't you think it is time for you to sell out your stocks and bonds and let the other chap make the profit that is coming?

Yet that is the very note that is sounded throughout the United States. The tumbling and breaking of prices throughout the last two or three weeks I believe most of us consider not altogether well balanced.

Prosperity Ahead

I telegraphed the Secretary of Commerce two weeks ago and I asked him for his opinion of conditions from the standpoint of that great department. Joshua W. Alexander of Missouri, a cool-headed, shrewd chap, a man old enough almost to be my father, a man in whose opinion I have confidence, answered by wire and by letter. The great note he expressed was that we were finding our level and he felt that the only risk lay in the too rapid descent of prices, that prosperity lay ahead in the country, that

the country was safe, and he emphasized the farm values as Meredith did, pointed out the inherent stability and the soundness of the country, and expressed confidence for the future.

Now, I am an optimist. There is a definition there that appeals to me. An optimist is a man who sees a light in the darkness where perhaps none exists, and a pessimist? Why, a pessimist is the damned fool who comes along and blows it out.

And they say an optimist is a man who still carries a corkscrew on his key-ring.

Now, probably for the next few weeks—I am not prophesying this condition—there may be a rapid fall in certain lines, stability in others. That will continue in your own industry. You are backed up against the raw material supply which is insufficient and you have a pretty solid stone wall behind you on that proposition. I don't see why anybody should run you off your feet. I don't see why you should feel any general anxiety in the general paper affairs.

If you think the country is "busted," go home and imitate Joel. Sit on an ash heap and wear sackcloth and let your friends condole with you. If you believe as I do, take your surplus of cash, buy a few Liberty bonds, a few standard securities, land, almost anything at present prices, with the assurance that within a few months your judgment will be justified and you will take the profit to which your courage will entitle you.

The stock and bond market, or primarily the bond and investment market as distinguished from the stock under this pressure is rather steadily rising, and that indicates that there are a whole lot of fools who believe as I do—I am one of them—that they are a pretty good investment. The number of those fools is increasing. I believe they are justified in their foolishness, so this thought, and then I will leave you.

The old firm of Uncle Sam and Company is solid. God in His wisdom has been unusually kind to us in this year, in this twenty-six billions of dollars of farm products, with the greatest credit a nation has ever known. We have almost everything to make us prosperous in the maximum degree. We only need stability of thought and courage in expression, and our future will be greater than that of any nation in trade and commerce and finance the world has ever known.

It is worth while to think of that a minute. It is true. I am not dealing in hyperbole. It is a credit man's analysis of the financial condition. The firm to which you belong has six hundred billions of wealth and twelve of indebtedness, and I congratulate you upon your membership in that firm.

Power Plant Management

By ROBERT JUNE, M. E.

Mechanical Stokers—Part II

This is the seventh in a series of articles by Mr. June, on Power Plant Problems. Succeeding articles deal with principles of heat absorption, coal and ash-handling equipment, storage of coal, abuse of steam, etc. Later articles sum up the best current practice in the business management of the power plant. The series is of timely interest and should prove of value to our readers.—Editor.

As mentioned in our previous article, the advantages of the mechanical stoker over hand-firing are as follows:

1. Even the continuous firing of the automatic stoker, as compared to the intermittent action of hand-firing.

2. Practically constant and uniform supply of air which can be controlled to some extent to meet actual operating conditions, as contrasted with the wide variations in air supply occurring in hand-firing with constant opening of fire doors and varying depth of coal.

3. Continuous and automatic cleaning of fires, leading to development of better over-all efficiency.

4. Large savings in labor, due to the fact that one man can take care of 2000 h.p. of stoker-fired boilers, as compared to 250 to 500 h.p. of hand-fired.

5. Saving in fuel cost through ability to burn lower grade of coal than can be handled to good advantage with hand-firing.

6. Practical insurance of smokeless operation.

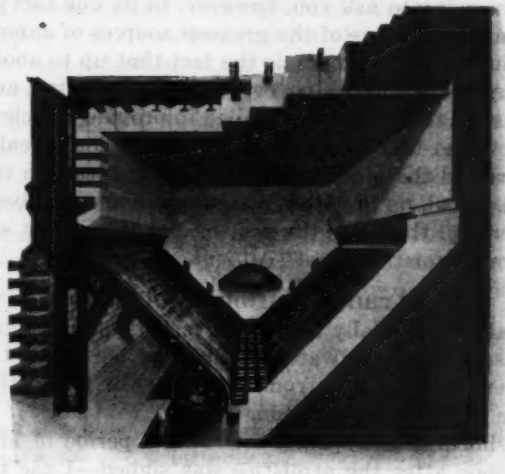
Overfeed Stokers

Overfeed stokers are of two types—front-feed and side-feed. To the first type belong the Roney, Wilkinson, and Acme stokers; to the second belong the Detroit, Murphy, and Model.

With the front-feed stoker, the grate, which is arranged in a series of steps, slopes at a considerable downward angle, front to rear. Coal received from the hopper is caked under a short suspended arch, and is then fed forward and down by the rocking action of the movable grates, aided by gravity. The clinker, working backward, is emitted at the bottom, being crushed by rolls in some types of installations. For convenience in handling, the dumping grate is frequently divided into several sections.

Front-feed stokers possess the important advantage of permitting easy passage of air through the fire, so that complete and efficient combustion is

readily secured. On the other hand, their construction is such that if boilers must be continuously driven at high ratings, the grates may become overheated. In order to avoid this danger of burning, with possible necessary renewal of grates, engineers usually prefer other types of stokers, if it appears probable that boilers must be operated above 200 per cent rating for considerable periods of time.



Overfeed stoker—side feed

Front-feed stokers are either natural or forced draft.

The side-feed, or "V" stoker, receives coal from two magazines located on each side of what is to all intents and purposes a Dutch oven. At the bottom of the magazines are coking plates, against which the grates, which are inclined at a steep slope toward the center of the furnace, rest at their upper ends. As the coal leaves the magazines, from which it is fed alternately and intermittently, it rests for a short time upon the coking plates. At this point the volatile gases are largely driven off, being mixed with air which has been pre-heated by admission through the arch over the fire.

As combustion proceeds, the fuel travels slowly down the inclined grates toward the clinker grinder, receiving the requisite amount of air through the grates to complete the process of combustion by the time the lower portion of the grate is reached when the ash and clinker are automatically removed.

The speed at which the stoker boxes push the coal into the grates is, of course, subject to easy regulation. The grates being pivoted at their upper ends and actuated at their lower ends, agitate the fuel bed to a constantly increasing extent as combustion proceeds, thus permitting free admission of air and assuring complete combustion. In stokers of this type, the clinker grinders can be adjusted to operate with reference to the amount of ash and clinker in the coal, irrespective of the action of other parts of the mechanism.

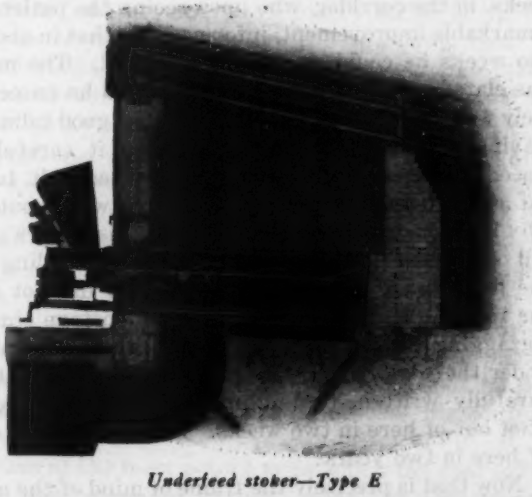
For boilers of moderate size, operated at 200 per cent rating, or less, the side-feed stoker makes a desirable and economical installation. It has the advantage of possessing a decidedly larger coking area than other types of stockers, and as the combustion area is likewise very large, it is possible, with careful manipulation, to secure complete and practically smokeless operation. Natural draft is the rule with this stoker.

The Down-Draft Furnace

While the down-draft furnace is not to be strictly classed as a stoker, since its use involves hand-firing, it nevertheless deserves consideration, since it performs certain of the functions of the mechanical stoker; that is to say, as compared to ordinary hand-firing, it permits the use of lower grades of fuel, assures practically complete combustion, and, what is extremely important in many installations, smokeless combustion.

The down-draft furnace consists of two separate grates, one above the other. The upper grate being formed of a series of tubes opening at their ends into steel drums or manifolds, through which the water of the boiler circulates, whereas the lower grate is formed of ordinary grate bars. The firing doors are near the top of the furnace, and the upper grate only is fired. This grate, it should be noted, slopes upward at a sufficiently steep angle to assure rapid circulation.

A division wall at the back of the furnace prevents the gases from going rearward, hence the draft is downward through the fuel bed, and the volatile



Underfeed stoker—Type E

matter, as it is evolved, passes directly between the grates into the combustion chamber. The lower grate is fired entirely by coke coal, falling through the tubes of the upper grate. As the flames from the lower grate arise they meet the down-coming gases, and the process of combustion is complete.

An objection sometimes raised to the down-draft furnace is that it "cannot be forced above rating," but this is not strictly true, as it can be driven to nearly, if not fully, the same extent as a hand-fired

(*Continued on page* 1050)

The Coal Problem

By L. ROMANSKI

Secretary, Chicago Wholesale Coal Shippers' Association

Presented at the Fall Meeting of the Salesmen's Association of the Paper Industry, on September 29, 1920, at the Edgewater Beach Hotel, Chicago.

PERHAPS it would be advisable to caution you at the outset that I am a coal man and that the management has provided a safe to take care of your valuables, jewelry and other matters. I see nobody leaving the room; perhaps ample police protection has been arranged for. That in a sense typifies the attitude of the average coal buyer or consumer toward the coal industry.

I am afraid that a far more difficult task has been outlined for me than I am able to meet. I am not an authority on the coal problem; I can only give you a few random observations as they come to me from daily contact in the coal business.

I assume that you are interested primarily in knowing whether coal will be plentiful this coming season, and if prices are going to come down.

If you sincerely anticipate from me an answer to those questions, you will find yourself in the mental attitude of the man who was committed to a sanitarium as the result of a nervous breakdown. After spending several months at that institution, one day he met his doctor, whom he hadn't seen for several weeks, in the corridor, who upon seeing the patient's remarkable improvement, informed him that in about two weeks he could go home discharged. The man was elated over this happy prospect, and he immediately went to his room to write home the good tidings. Having finished the letter, he folded it carefully, placed it in an envelope, addressed and sealed it, took out a stamp and moistened it and as he was about to affix it to the envelope it slipped from his fingers and fell on the back of a cockroach that was crawling on the floor under the table. Our patient did not see the roach. What he did see was the postage stamp zigzagging on the floor, up the wall and disappear under the window sill. He took the letter he had so carefully written, tore it up and said disgustedly, "Get out of here in two weeks. Hell, I won't get out of here in two years!"

Now that is precisely the frame of mind of the man who accepts the guidance as to the future of the coal supply from a coal man.

In attempting to arrive at any conclusions as to the possibilities in the coal business, would it not be advisable to go back just a little into ancient history, say twelve or fifteen months? The present era of high prices in coal prices dates back to 1916. The time being rather limited, I will not bore you with tracing the various steps and ups and downs of price fluctuations and the ultimate establishment of the fuel administration.

I am going to ask you, however, to fix one fact in your mind, that one of the greatest sources of annoyance in the coal industry is the fact that up to about two years ago it was a poverty-stricken industry, and because of that fact it had failed to provide sufficient publicity so that the man in the street could really understand that there is such a thing as coal in the world. Coal, up to within a short time ago, has been so plentiful that, like the proverb, "You couldn't see the forest for the trees."

A Transportation Problem

Coal is essentially a transportation problem, just as essential as the water in the lake here, and the problem is getting it from the source of production to the point of consumption.

A shortage last spring, following a period of idleness soon after the armistice was signed—I use the term idleness in a figurative sense, because November 11, 1918, roughly speaking, ninety per cent of our industries, in one form or another, was engaged in war work and that meant, very largely, the iron industry, for the iron industry is the largest consumer of coal—we found ourselves overstocked and overstocked very heavily. Just before then, the Fuel Administration—and I hereby plead guilty of having been affiliated with the Coal Administration of Cook County—had spent thousands of dollars urging people to store coal early.

Mr. Merrick has told you that one of the essential or elementary sources of our oversupply was the fact that the public at large was probably provided for far more than its requirements actually called for. That was true of the coal business. In the fall of 1918 we found ourselves overstocked with coal. We had gone through the same critical, psychological cry of coal shortage. Nevertheless, you have never heard of anybody or any industry suffering physically for the want of coal.

Enormous Production in 1918

The year 1918 we produced more coal than any other year in the history of the United States. Our surplus production in that year was 30,000,000 tons greater than our normal consumption, including exports both abroad and in Canada. With that situation, we come to the period of the spring of 1919, a year ago this spring. What was that situation?

Just before then, every consumer of coal was endeavoring to reduce the stock that he had accumulated just prior to the signing of the armistice and a large extent to the interest of the authorities. With this attempt on the part of the public to reduce its

stock, the coal industry found itself with insufficient orders on its books to operate their mines at their full capacity, and it was necessary, at least in the central West and to a large extent in the East, that an effort be made to curtail production, not as a result as has been directly charged and popularly believed through any cooperation or general understanding on the part of the producers, but simply in obedience to the law of supply. There wasn't sufficient business to take care of the production of the mines.

If the gentlemen who are so loudly charging the coal industry with conspiracy would take the trouble to study the weekly statement issued by the Geological Survey, the various causes assigned are very plainly enumerated, and it can be demonstrated very clearly that in the spring of 1919 the term "no business" was assigned as being the outstanding cause for the idleness of at least sixty days in the largest mines in the Central Field.

The National Coal Association, that is the largest association of coal operators, saw the danger sign. They realized that unless a little stimulus was injected into the coal consumer, and, mindful of the gradually depreciating efficiency of our transportation, we would be again confronted with a situation such as we had gone through in the winter of 1916 and 1917. The National Coal Association had raised a large sum of money, urging the people to buy coal. They used newspaper space freely throughout the United States. It is true, mistakes were made. Please understand that coal men are not students of advertising or psychology. We can easily place our fingers now where the mistakes were made. Nevertheless, it was the sincere effort on the part of the coal-producing industry to awaken the public to a realization of the actual condition that confronted them.

Mine Workers Make Demands

The warning cry to a very large extent was heeded. Conditions improved in July and August of last year. Orders began to accumulate, and then we saw other aspects, that of a declaration of war upon the coal-consuming public by the United Mine Workers of America at a time when the people of this country were less able to defend themselves; in other words, the miners saw the situation. They came forth and declared that unless their demands would be met in the winter time, they would lay down their tools and the public could freeze. It was a serious and an alarming situation.

Everybody on every hand recognized the danger; they began to accumulate and store coal. November 1st, a year last, the men carried their threat into execution. True, some of the men remained at work, particularly in the Fairmont region of West Virginia; and we pulled through, but the surplus coal that an ordinary concern carries had been completely wiped out, and when the men finally returned to work, there was nothing to fall back on in the event of an emergency.

I am just briefly going over this, without bothering you with details of ancient history.

What do we find in the spring of this year? We find that conditions in the coal industry were becoming more normal as the time went on. I am dealing particularly with that period and the date when the outlaw strike went into effect.

Prices of coal, especially here in the central West, on contract varied between two and a half and three and a half dollars at the mine, depending upon the quality and size of the coal. That you will admit was quite a revision from the five, six and seven dollar prices, which were obtained shortly before the strike went into effect.

Switchmen's Strike

Those we consider normal conditions. They were approaching normal and no one really felt any criticism that he wanted to offer. Any fair or reasonable minded man had no criticism to offer in that situation. What happened? Like a thunderbolt out of a clear sky, whether it was prearranged or not, I can not say, although there are men who presumably have access to certain inside information, that the switchmen's strike was the carrying out of a prearranged program of the men behind the Plumb Plan League, in order to force upon the people of the United States the fact that there was a railroad problem and that the railroad employes demanded absolute and ultimate ownership.

Now, whether this switchmen's strike is the last strike or not, I do not pretend to answer, but the information that has percolated out through underground sources seems to indicate that this is not the last strike of its kind.

The coal man, as I said at the outset, was subject to a great deal of criticism. Those of you men who are compelled to buy coal in the open market find that your prices are doubled over what the contract prices are. Naturally, you feel bitter toward the coal men.

There are various factors entering into the situation that compel the coal man, as a matter of preservation, to charge a higher price in the open market than the quotation on which he bases his contract figures.

One of the most potent evils which the coal industry was compelled to face, when the switchmen's strike was so imminent, was the fact that the Interstate Commerce Commission put out an order known as Priority Order No. 10, which gave the railroads the right to commandeer coal, or, to put it in another way, gave them the power to assign cars to those mines that would take care of that particular railroad's needs.

In other words, if a coal mine refused to furnish a railroad with coal, under the assigned car rule, that particular coal mine would be deprived of getting any empty cars, and, as a result, some of the mines did not operate more than six hours a week.

Now, those of you who have taken the trouble to investigate coal mine costs can very readily understand that to operate a plant six hours a week will bring your costs to an unusually abnormal level. That, to a very large extent, is one of the reasons for our existing high prices of open market coal today. It has been charged that the reason that coal is scarce is because there is a scarcity of cars.

Poor Car Distribution

We come to the transportation problem and investigate that subject. I think you will agree that that will disclose the fact that there really is no such thing as a car shortage, but there is a very manifest evil of poor car distribution. We are today suffering not so much from a car shortage as we are from inadequate terminal facilities, and, second, more from a shortage and lack of motive power than we are of cars. We need more locomotives than we need cars.

The prices of coal began to advance sharply as the open top equipment began to disappear, at about the time that the railroads were turned back to private owners, and during the period that the switchmen's strike went into effect.

I will just cite you one instance that occurred right here in Chicago. I have it from good, reliable authority from men who know.

One of our western trunk lines is not a coal carrier, and therefore is not in possession of an abundance of open top equipment. They made a contract with the Buick Automobile Company to furnish them five trainloads a day of open top cars for the transportation of Buick automobiles from Flint, Mich., to the Pacific coast.

Now, it doesn't require a mathematician to figure out the number of cars that are withdrawn from the normal use, that of transporting coal, for the purpose of transporting pleasure cars. Generally speaking, allowing thirty days for the round trip of an empty car—I think ninety days would be a closer approach to the exact facts—and figuring about ninety cars to the trainload, roughly, you have 13,500 coal cars that were used in order that it would be possible to transport pleasure cars from Michigan to the Pacific coast.

Buick, I understand, is only one. Now, multiply that by the number of pleasure cars transported north, east, south and west, and you will see what inroads are made on the industry.

Extracts from Mr. Colver's Report

I want to read to you a few extracts from the reports made by Mr. Colver of the Federal Trade Commission. These statements are more or less authoritative, particularly that of Mr. Colver.

"The Illinois Agricultural Association, being confronted with the same problem of coal supply, not having cars to move grain, in some instances found that grain was rotting, and instructed its secretary to make a survey, and here is the report: This was in July of this year, so it is very recent and fresh.

"At 146 of the stations twenty-nine and a half per cent of the cars stood on track the full seven days of the survey. The first day of the survey there were 9,294 cars standing on all the tracks in all the towns; on the last day, 938 of the same cars standing in the same place. This means ten per cent of the cars were idle for seven days straight."

Now, gentlemen, I take it you will agree with me, this statement does not bear out the fact that there is such a car shortage. Mr. Colver, in his analysis, makes the following comments:

"Since 1916 you have heard the clamor about car shortage, which is taken to mean there are not enough cars, and that the railroads ought to have more cars. The fact is that if the available open top cars were loaded with coal and moved at canal boat speed, there are enough cars now on the tracks to take care of all the present requirements, with a ten per cent overload factor of safety.

"There is just one thing that believers in Government and private ownership of railroads agree on, and that is that maximum efficiency can be had if these railroads are one operating unit.

"So far as the railroads are operated separately with separate ownership of motive power and rolling stock, no railroad, not even the richest one, can operate profitably if it has to supply itself with motive power and rolling stock capable of taking care of its peak load."

Now, I just want to draw to your attention an incident coming under our personal observation. Our company ships a large quantity of coal from southeastern Kentucky. That is served by the L. & N. Railroad. Up to about five or six years ago—well, say ten years ago—the L. & N. was a very conservatively operated carrier, but with the advent of new blood, they decided to develop some of the most wonderful coal fields in the United States, located on their line in the southeastern part of Kentucky. They went ahead and made ample provisions for an adequate car supply. For several years, the L. & N. was able to take care of the requirements that were placed upon it, and yet, in the fall of 1916, the Interstate Commerce Commission had to send one of its members to Louisville, Kentucky, to conduct an investigation primarily at the instance of the L. & N. Railroad, because the L. & N. Railroad's open top equipment was scattered to the four winds of Heaven, and under the then existing conditions, they couldn't force those cars back. Those rich coal fields were lying idle, because they were unable to get their own cars back and serve their own trade.

That is just one illustration and can be multiplied by many others; the B. & O., etc.

Pullman Car Plan

"The greatest commodities of the country are produced and consumed seasonally and sectionally. This

does not necessarily mean government ownership or government operation. It means handling this equipment just as the Pullman cars are handled.

"During the Republican convention, the peak load supply of Pullmans was mobilized at Chicago. A few weeks later they were mobilized at San Francisco. In the winter time they are mobilized in Florida and southern California. In the summer time they are mobilized at Atlantic City and the Maine Coast.

"The surplus Pullmans are mobilized sectionally and seasonally to meet extraordinary traffic conditions and having met it, they are hurried away to meet emergencies.

"Is it not just as possible to handle the new supply of rolling stock and motive power in the way that the Pullmans are handled?"

Mr. Clover also goes on to say among other things, as a remedy of this situation of our car shortage that a penalty be charged for the misuse of equipment, similar to that in the transportation of perishable freight.

I don't suppose any railroad man would agree to any such arrangement. Undoubtedly they would say it is revolutionary, but it is something that bears investigation. We have seen that there really is no car shortage, that our real transportation problem lies in the fact that there is poor distribution available of the car supply. What is the remedy for the situation and what is the outlook?

Good Outlook

Mr. Merrick has told you that according to the reports of the American Railway Association, the per ton freight movement in the United States for August was greater than any we have ever experienced before, I believe he said ten or twelve per cent. Today the coal mines of the country are working practically at full capacity, limited only by the car supply. The switchmen have gone back to work. The transportation situation is gradually becoming more clarified, so that, as I see it, if we have no unexpected labor difficulties over some other unforeseen contingencies that may tie up either our transportation or coal-producing facilities, I can only see for the future, so far as coal is concerned, an abundance of it.

I will just read you four lines from the Geological Survey to bear out my prognostication. There were produced in 1917, in round numbers, for the first 222 working days, 390,000,000 tons of coal; in 1918, there were produced 495,000,000 tons of coal; in 1919, 329,000,000 tons of coal, and in 1920, there were produced 361,000,000 tons of coal. The year 1920 is thus about 14,000,000 tons behind 1917, and forty and three-quarters million tons behind 1918, but is over fifty millions tons ahead of 1919.

In this connection, it should be remembered that production during the year 1918 exceeded consumption and provided for a net addition to the consumption of stock by the end of the year of approximately thirty million. In the year 1919, the procedure was reversed, and from that outlook, I don't see why the public at large, despite any statements made to the contrary, officially, privately or otherwise, need become panic-stricken. True enough, we cannot supply ourselves with a winter supply of coal within the next thirty days, but if the public at large—and we do hold the public at large responsible for it, and if we hold the automobile man responsible—if you will go away, content to receive your normal requirements, without bidding against each other, I am confident that the price situation, speaking of the open market price, as well as the production situation, will take care of itself.

I want to tell you a story. There was a chap who entered a bank, walked up to the cashier's desk and asked to borrow ten dollars. The cashier looked at him and said, "You can be accommodated across the street," where there was a place with three balls.

The man wanted the loan there, so the cashier finally consented to grant it, whereupon the customer reached in his pocket and laid down three thousand dollars' worth of perfectly good liberty bonds. The cashier looked at him and said, "Why do you want to offer such large security for so small a loan?"

"Well, I will tell you. If I were to go down to rent one of your safety boxes, I would pay much more than this. As it is, I am getting the same thing for seventy cents."

Low Water in Wisconsin

Wisconsin paper and pulp mills are suffering from low water. It is stated that the Wausau paper mills at Brokaw, Wis., are closed down on this account. Only the wood room and sulphite mills are reported in operation. At Merrill, Wis., the Ewing-Everest Pulp Company is working but one of its three grinders, and that one only part of the time.

Reports state the water in the Wisconsin rivers is lower this fall than has ever been known at this time of the year. The John Haling mills at Orivitz and the mills at Peshtigo have curtailed operations, as well as the Escanaba Pump & Paper Company at Escanaba, Mich.

On the Fox river the flow is said to be only about twenty-five per cent of normal.

Kalamazoo Superintendents Meet

The Michigan Division of the American Pulp and Paper Mill Superintendents' Association held their opening meeting for the fall season on Thursday evening, September 30, 1920, at the Park American Hotel.

The division inaugurated a special session at this meeting by inviting the wives and ladies of the superintendents to be present, and the entire meeting was given over to a fine banquet and entertainment.

Cost System and Executive

By COL. B. A. FRANKLIN
Strathmore Paper Company

Presented at the Convention of the Cost Association of the Paper Industry on September 27, 1920, at the Waldorf-Astoria Hotel, New York City

PROBABLY the way to tackle this subject is to consider what is an executve, and how does he "exec." I think probably the explanation of why we have not got more cost systems, and why we have not got better cost systems, is probably due to the nature and method of operation of our executives. Probably many of you who have studied the queston of executive control and consideration, would be willing to agee with me that in most manufacturing concerns the executive is a man who trusts to his own ability to see things, and his own judgment to act through observation. If that were not so, then the question of a cost system, and a first-class cost system, would have been solved long ago.

I think it is probably the history of most manufacturing concerns, that the animating idea that started them was the desire of some man to go into business, and his belief in the results of his experience and his judgment to operate in a personal way. The result is that where there seems to be a demand, new manufacturing concerns start, and the executive or the "powers that bee"—it may be more than one executive, but generally it is one when they start—trust to their previous experience, and their own opinions of their ability to handle the situation correctly.

It is true that a great many men do just that. Possibly the fact that they do may be considered an adverse judgment on the efficiency of operation of most plants. But it is true, and it is true quite largely in the paper business, that a very large number of the plants exist, and exist profitably, without any great mass of facts presented as a basis of operation. I think possibly that one of the difficulties is that the executive is so close to his business, he is so agitated by the questions that come to him constantly, and is so ill-informed as to the result of many of his judgments, that he is a good deal like the old Irish lady.

Two Irish ladies were going to church, and they heard the chimes as they approached it. As they got nearer, the chimes got louder, and one lady with a fairly weak voice said, "Aren't the chimes beautiful?" And the other Irish lady said, "What?"

"Aren't the chimes beautiful?"

"I can't hear a darn word you are saying for the noise of them bells."

I think that is probably the trouble with a great many executives. They are so close to the details of their own business that they don't hear the noise of the methods that people are pushing forward all the time to operate their business.

Management

Business, however, is changing, and possibly some of you gentlemen have noticed a very marked rising in importance of what is now called management. In the discussion of business generally, great stress has been laid upon two great classes, namely, capital and labor. Whenever we consider business, or have considered it in the past, we have thought mostly of it in terms of capital and labor. Labor itself has always fought capital as being the other half of business. But, as a matter of fact, there is now arising a new group, a powerful group, a group which of course has been in the building and in the making and has always existed, but it is now beginning to exist as a separate and acknowledged entity, namely, management, a group of men who operate plants very frequently without any ownership of the stock, without any of their own capital in it, or without any consideration of labor as of their own work, except as labor is the producer.

I think that it is not impossible that in the next quarter of a century, this group called management will come very much more into their own than they have in the past. I do not want to predict that capital will be a separate group from management. I think it will be a fine thing for management and a necessary thing, and probably management will control considerable of the capital that is in business, but the great tendency today is to boost this group called management. This group is going to find more and more the absolute necessity of cost system work for a great many reasons.

In a great many of the present manufacturing plants, as I have pointed out, the operations are controlled by the individual judgment of men. It is unfortunate that the individual judgment of men, as shown by the facts, is not dependable. But that alone would not be probably the determining feature. The great feature in the growing necessity of cost system work is the fact that units are becoming greater. In all of the talk that we have heard about labor unrest, we have heard many times that in the old days the plants were so small that the heads of the plants could come in touch with labor, but as time went on the group has become greater and greater in size, so that the head of the plant is no longer in touch with his labor, and we have found necessary the discovering of ways to take the place of the old personal touch.

Management is developing tremendously. In the old days, there were only one or two or three depart-

ments. There was the superintendent who controlled everything in the plant, and there was the purchasing department directly under the superintendent, and the sales department. If you would take any of the modern large manufacturing plants, I venture to say you would discover as many as fifteen or twenty, more or less, independent operating departments under the general control of the management, none of which have much to do with capital except help earn its dividends, and none of which have much to do with labor except to plan and devise and institute various methods of control. The situation, therefore, has gotten beyond the control of one man.

Efficiency

Movements of factory life are hidden and untranslatable, except the fact that efficiency is a term which has been used and abused very considerably of late years. We sometimes speak of factories as being efficient. We sometimes speak of them as being inefficient. I wonder if any of you gentlemen have ever considered what the efficiency of an individual or a plant really is, in percent? I only want to introduce this idea very briefly, gentlemen, as something that you might think about.

My own judgment is that very few individuals possess as much as fifty percent efficiency. I mean by that that I—I will start with myself, and yourselves, and the people you know—very seldom accomplish in a day's work, in a week's work, in a month's work or a year's work, fifty percent of what you are really capable of accomplishing. I couldn't illustrate that to you by anything you do, because we always like to think of inefficiency as of the other fellow. I can only suggest to you certain general movements in which you are interested, and the rest of mankind and the rest of our countrymen. Take for example, religion. I take it (and I don't want to start any arguments) that most of us are Christians here and believe in the Christian religion. We want to support the churches and so forth. But take any church in your community and consider what the possibilities of that church are if every man who believes in the religion practices up to the full. And then compare with that standard the actual results in churches. You will find, I will wager, anywhere from ten to thirty-five percent.

Take your citizenship, gentlemen (and I hope you are all going to vote Republican Party this time) but take the nominal opportunity that you have to express yourself in favor of your own Government in all the offices. Or take, better still, your ward or your city, and compare the people who do vote, in percent, with the people who can vote. You will find rather a small percentage. It varies in different communities, according to the interest stirred up, but on the average it is not more than fifty percent, I will venture to say.

I have only illustrated in general terms the things I am trying to say: that human nature is not efficient generally in a very high percent in pretty nearly anything it undertakes. I believe we are more efficient in our factory life than we are in any other thing, because there is a profit attached to it. I think if we would introduce into the churches and into our Government some species of reward which most of us could put into our pockets, we would probably have more efficient churches and a more efficient Government. I am not here to crack up either the churches or the Government, but merely using them as illustrations. We are not very efficient in our factory life. We are probably a good deal less than seventy-five percent efficient in our factory life.

All that is merely by the way of saying that a very large part of your inefficiency is due to the fact that we don't have the facts, the costs of our departments, the costs of our operations, the cost of the salable article before us. We judge by instinct; we depend upon our judgment, we depend upon our observation; we depend upon certain things that are presented to us which are not complete, which are not proven, which are more or less gathered in a desultory way. We depend upon our final statements when it is usually too late to make any judgments based on them.

It is absolutely essential, as proven time and again in all kinds of operations, that for the highest efficiency, we must have the facts to go on. That is so fundamental, so absolutely reasonable, that if we could get one hundred percent of our executives here I wouldn't expect a single denial from them.

But we do worse in our factory life as it is now constituted. We depend not merely on our judgment, but on the judgment all down the line of various and sundry men, without any facts to back up their judgment.

Judgment

Now, judgment is always animated by what it sees, sometimes by enlarging it—by what someone else sees and tells them. And I wish I could marshal before you a great many facts which I have seen which show that no matter how good judgment is, it is compelled to take the facts put before it in lieu of any other reason or judgment; and that in such cases where the facts are not regular, periodical and proven, that judgment goes astray; that judgment loses money for its company. The unfortunate feature is that under the conditions without a cost system, one never knows it. One wonders why this and that company doesn't make more money, and is not more profitable, and each one may have his own suspicion, but no one can put his hand on where the situation went astray, where there is no definite, regular cost system.

I have been absolutely unable myself to comprehend why every one of our paper mills hasn't got a cost system, except purely on the basis of human nature. One of the great problems of this Cost

Association has always been to discover how to operate with individual executives, so as to persuade them that beyond a doubt, beyond a question, a cost system is a tremendous profit. I remember talking with an executive at our last meeting, I think it was, and I advised him strongly to have a cost system. He said to me, "Well, we figured it out, and it would probably take two or three clerks to operate that cost system, and I don't know where to get the money from."

Now, that is fundamentally one of our difficulties, in attempting to introduce cost systems. The first step is to build a cost organization, and so little faith, so little knowledge, so little judgment and reason in that matter do successful executives use, that they are unable to see that even if they spend five or ten thousand dollars a year in building up a cost system, that their judgment will be so barricaded, so guided and so animated by fundamental facts of the business, that if they have any trust in judgment alone they can see how to prove the situation. It is almost incomprehensible.

It would be a gruesome thing if by some operation no manufacturing plant could make a profit without a cost system, but short of that I don't know how we are going to get cost systems in all of our plants except by long and hard work. I speak somewhat feelingly on this matter, and I think all of the executives are with me on this proposition: that it is not that we are animated by any tremendous desire to bless the manufacturing business by pushing the cost system work—let us have that, if you will—but we are animated by a desire to make it easier for our own plants to make a reasonable profit. We are right now approaching a situation which may give us a good deal of trouble. We have been blessed with at least one year of tremendous orders. In the last three or four months, unquestionably there has been a falling off in business. Personally I am optimistic, and I think we have nothing greatly to fear during the next six months.

Cutting Prices

But nevertheless, if the situation does come about that orders shall continue to go below one hundred percent normal, there are going to be plants in the paper business who have no cost systems who are going to feel that if they lower their prices and go out and get business they can do so; and unquestionably there is a certain amount of truth in that, although there is a saying which has greatly come into vogue in the paper business, that cut prices do not bring business.

It may be, therefore—and I am not an advocate of high prices, gentlemen—that we who are preaching the cost system work may suffer definitely, because some of our competitors have no cost system, don't know precisely what their goods do cost them, and may feel that they can go out and cut prices and get more business. So that we have a very personal and real interest in attempting to push this cost system proposition.

The Executives

Now, at our Cleveland meeting, as some of you will recall, we did agree that executives of the mills knew very little about cost work, took very little interest in it, and did not attend our meetings as we believed they should, and that consequently the pushing of cost work and bettering of cost systems was therefore a difficult matter for them. It has been my pleasure to know most all of the executives in the writing and cover divisions, anyhow, and in a good many other mills. And I have been thinking over the problem which came up at the Cleveland meeting—lack of interest of executives. I have concluded, gentlemen (and this will hit most of you) that the fault was in the cost work; that if, instead of cussing the executives as we are inclined to do, we will appreciate his situation, we will start with the fact this thing could be made interesting to him, I believe that in the coming year we will make a little more headway.

I have said several times, in the opportunities that I have had of talking with you, that one of the greatest difficulties of the cost system is that no matter how simple it may seem to the man who understands it, it is very complicated and difficult to the man who has not had a very definite and exact training in it. I have said also that it is true of the normal man, that he abhors figures; that he doesn't want to get down to details. When executives consider their businesses, they are very much interested in policies, they are very much interested in knowing how things are going, interested in their competitors, but they are not interested in detailed figures, because most of us from boyhood have felt that arithmetic or mathematics was the last thing to take an interest in.

Want Common and Fundamental Figures

We have got to realize that executives generally do not want to, and will not be interested in the details of a cost system; that it appears to him complicated, that it appears to him that many things are presented to him in an uncorrelated way, that he disbelieves certain facts which are presented to him here and there without showing how they are all hooked up, and he won't take the time to tell how they are hooked up. I believe, therefore, that any live, up-to-date man who is handling a cost system, ought to begin a very definite course of operation with the executive in his mill. I believe that the first thing he must learn to do himself is to understand what cost figures mean. He must be willing and thoroughly able to prove his case. He must take to the executive from time to time, common and fundamental figures and discuss them with him.

I am afraid that most of those who operate a cost department stay there. They are a little afraid of the executive. He is a busy man. His door is closed. He is writing letters when you open the door to see what he is doing. Consequently, you pay no attention to the executive until he asks you something. I am inclined to think that that is where we are making mistakes. I am speaking of the plants, now, in which there are cost systems. I believe that it is going to be personally and financially a good thing for cost work to begin some definite operation with the executive, to begin to mark it a fact from the top down, to seek interviews with the executive definitely, but in doing so he must have figures, comparative figures showing something about an operation which may be too expensive, or which may be apparently cheaper than it formerly was. He must have facts about departments which are either improving or going the other way. He must have facts about costs of articles which are either better, or worse than some standard.

I am very well satisfied, from a knowledge which I have of executives in paper mills, that those things would be vitally interesting to them ,and while they didn't seem to bite first, they eventually would take a greater interest in them.

Translating Figures

Now, if a cost clerk is going to embark on a course like that, he must begin to develop certain fundamental necessities of cost system work in himself. He must in the first place, develop absolute accuracy. He must know and be able to prove that his figures are right. He must be able to understand what his figures mean. He must have an imagination which translates the figures he represents into a picture of the department, of the operations, of the course of procedure in the factory, so that he can explain to the executive what these figures mean—in manpower, in materials, in machinery. He must develop some practical instinct which will tell him when these figures mean something worth while the executive's attention. He must begin to develop definite, complete and plain reports to the executive along the lines upon which an executive can take action.

I believe that possibly those of you who are in cost work ought to begin to assert the necessity of your work, the value of your work, the dignity of your work. I am beginning to think more and more, that we who have been interested in cost work have not wakened up ourselves to the necessity and the value of showing to the executives how the cost system makes a clear and distinct presentation of facts. It may be that we will discover ourselves, that after all, a great deal of our cost work is merely a jumbling of figures. I have time and again seen figures presented, which presumably represented something, that were merely a jumble. I believe in this growing group called management, which from now on is going to have a greater and greater day, that the cost clerk will have a very definite and satisfactory position if he makes it for himself. But he must make it for himself, not merely by adding and multiplying and dividing and subtracting, but by comprehending what the addition and subtraction and multiplication and division really means, by translating into facts, as a basis for judgment, which the executive can use.

That is the point that I wanted to bring out in this proposition of the cost system and the executive. It is beyond my belief absolutely that the executive can do without a cost system. He may get by in many cases reasonably profitably, but in the long run the cost system is absolutely inevitable. But it is like a great many other things in this world—religion and a whole lot of other things—that we eventually check, but don't check up. Once the executive gets the cost system he is liable to keep it, and understand it and operate upon it, and make an increasing profit, but he doesn't get it because all of his life he has had the experience of working on his judgment, of working on the judgment of other men, of using methods in the way of machinery and so forth, and I think that instead of blaming the executive for not taking an interest in cost system work, we ought to begin to wake up and to sell the proposition. If the cost system is worth while, it ought to be reasonably easy to sell. If we, as cost men, understand it, we ought to be able to sell it. But we can only sell it in the plants where we operate by making these cost facts pictures of what is happening, by being able to translate to our executive what these pictures mean. These pictures are not easily understood. Very few things are fundamentally understood in the world.

Go into an art gallery, and see some of the paintings of the masters of the world, and unless explained to you there are a great many of them that you can't understand; you don't know what the artist was trying to present. He may present allegorical figures which present only pleasing groups, but behind every magnificent picture there was probably a magnificent idea, and you only grasp it when it is explained to you. That is equally true of a cost system. A cost system can be made to present a great many figures and a great many facts, but unless the man who paints the pictures with the figures understands what the pictures mean, and can explain them, I am satisfied that his executive will not take any interest in his proposition except he be forced, from time to time, to do so.

Fighting the high price of print paper by controlling forest insects is one of the tasks before the New York State College of Forestry at Syracuse, which is having specialists study bugs which damage trees with a view to controlling their damage to growing timber.

Beater Tender's Duties in a Box Board Mill

By RICHARD CLAYTON

THE beater tender in a box board mill (chip) can work himself to death and accomplish nothing; or by using his head instead of his hands, he can accomplish a great deal. In a large mill where he has a number of helpers he can so organize or systematize the work that the chests may be kept uniformly full of stock. His duty is to see that each man is doing his work; that the strings and other rubbish are thrown out and gathered up; the proper grade of stock is being used; if the stock is a mixture, see that the correct weight of each kind is furnished; keep a check on the size and alum, and see that it is put in at the right time; also the coloring, should there be any used.

The continuous system of beating has done away with the old way of making the stock in the beaters. In using waste paper stock, it is only a question of mixing and dissolving and getting it onto the machine, the quicker the better, as the longer it stays in the beaters and chests the "slower" the stock. This system of beating has been a great help to the beaterman, as he does not have to be continually raising and lowering his rolls, they being kept up all the time, or until they become filled with an accumulation of rags and strings, when the roll must be lowered to beat them off.

The beaterman should look after the equipment of his room, keeping the bearings oiled; see that the belts, conveyors, etc., are in good order, and, when the mill is down on Sunday, do such repair work as cannot be done while running; changing bed plates; cleaning chests; taking up belts, etc. In order to get the best production, the beaterman and machine tender should "pull together." Trouble on the machine is not always because of bad stock; but quite often it is and can easily be remedied by the machine and beater tenders getting together and deciding what best to do. A beater tender does not like to see "broke" coming back any more than a tailor likes to see a suit of clothes coming back to be worked over.

The best equipped beater room is the one where there is no surplus help; just enough help to do the work with everybody busy. One man too many causes trouble, because then somebody will be loafing, and one loafer will spoil the whole shift in time.

The proper care of the beater rolls is another duty which the beater man should not neglect. A loose bar is easily detected and should be looked after at once before it comes out and wrecks the beater. When the bars in a roll become worn down to within two inches of the wood, the beater becomes slow and at a favorable opportunity should be taken off and the wood either trimmed down between the bars or the roll refilled with new steel and wood.

The beating of straw pulp is altogether different from paper stock. With straw, the continuous system cannot at present be successfully used, owing to the fact that straw stock must remain in the beaters long enough to be washed and brushed until the fiber is in proper shape for the jordans and machine. On this class of stock the beater tender should handle the rolls carefully, as the fiber can be destroyed the first half hour by crowding it too hard in letting the roll down on it too heavy.

Well beaten straw stock makes a beautiful sheet of straw board for "stand up" or "folding" box. On the other hand, stock that is not properly cooked and prepared in the beaters makes about the worst article imaginable.

J. M. Allen Resigns

While the article on the proceedings of the recent cost association meeting, in New York, states that J. M. Allen was re-elected secretary-treasurer, and while this was true, this makes all the more surprising to be informed that Mr. Allen has resigned this position to become associated with the Mosler Safe Co.

During the time he has held this position the association made giant strides toward its goal of betterment for the paper industry, and it is to be regretted that he has felt it necessary to sever his connection with this organization.

Before coming to this work Mr. Allen served two years in the Ordnance Department of the United States Army, and before that time practiced law in Louisville, Ky. He leaves many friends in the industry, and the well wishes of all of them go with him.

Direct Mail Convention

The Third National Convention of the Direct Mail Advertising Association, with which is affiliated the Association of House Organ Editors, will be held at the Board of Commerce, Detroit, Mich., on October 27, 28 and 29, 1920.

The committee in charge of the program has not attempted to emphasize the dominance of direct advertising, but its importance and the way in which it ties up with nearly every other known form of advertising.

The American Writing Paper Company will award an attendance banner to the organization having the largest percentage of attendance at the convention.

Acids and Caustics

Prepared by the Engineering Department of the National Safety Council

BECAUSE acids, caustics, and alkalis enter into the processes of paper manufacturing in only an incidental way, many employers and workmen give little real consideration to the dangers involved.

Chemical Injuries

In general, chemicals may cause injury in four different ways: by

(a) Burning, when in direct contact with the skin, eyes, or clothing;

(b) Fume poisoning, when their noxious fumes or vapors are inhaled;

(c) Poisoning when taken internally;

(d) Fires or explosions resulting from their improper handling.

Burns

Chemical burns are painful and usually slow to heal, sometimes resulting in death; and workmen cannot be too careful in avoiding accidental splashes and direct contact with acids and caustics. Rubber gloves, rubber boots or wooden clogs, rubber aprons, and tight fitting goggles with rubber frames should be used by every workman exposed to this hazard, and acid-proof hoods should be available at all times. Workmen should not be encouraged to believe that chemicals will not burn through woolen clothes, for although it is better to wear wool when working around chemicals, dependence should not be placed on this alone.

Good floors will help to prevent many chemical burns caused by workmen tripping or slipping. Floors should be kept in good repair, and should not be slippery nor made of material that will wear slippery. They should be properly drained to the sewer or to a catch basin. Concrete treated with a solution of silicate of soda, or brick makes a good floor. Wood many be preferable where there is an explosion hazard.

Good lighting is a paying investment, not a needless luxury. In a properly illuminated plant, accidents are less frequent, the employees work more efficiently and make fewer mistakes. Good lighting is especially desirable where steam, fumes or vapors are apt to limit dangerously the field of vision. The use of vapor-proof electrical equipment prevents sparks and corrosion.

Men continually handling acids and caustics should be encouraged to change their clothes and take a bath before leaving the plant at the end of each shift. In some plants a double compartment locker is assigned to each man; one compartment to contain work clothes, the other street clothes. In locating lunch rooms, it is well to have the workmen enter through a washroom so they can wash all chemicals from their hands and faces before eating.

Many manufacturers consider it important to post signs printed in languages readily understood by the workmen, warning them of the dangerous properties of the different substances used. Others publish pamphlets to accomplish this purpose, making sure that new employees read and understand them before starting work.

The treatment of chemical injuries and illnesses should be left wholly to the physician in charge. A workman's life, however, may depend upon the immediate administration of relief, so first-aid remedies, with instructions for their use, should be readily available at all times. Some one person should be made responsible for the quality and quantity of remedies kept in workrooms and at first-aid stations.

For all chemical burns, physicians recommend the immediate use of clean water in large quantities. Even substances insoluble in water may be mechanically removed from the skin surface by flushing. Some employers have installed shower baths in or adjacent to each workroom, under which a man may stand and be deluged with water in case of chemical burn. In locations where showers cannot be provided, a flexible water hose or several buckets of clean water may be substituted.

In applying water, an effort should be made to have the water flow inside the clothing, for if the skin is being burned by a chemical which reaches it after saturating the clothing, and water is applied on the outside, the resulting heat may be intensified before sufficient water can enter to dilute it or wash it away.

Smearing the arms with a special ointment made of three parts petroleum and one part lanolin (lanolin is another name for sheep's wool grease) will, to some extent, prevent the corrosive action of the weaker acid and caustic solutions. Another ointment is composed of equal parts of calamine and boracic acid. Still another is composed of pine tar and fish oil.

The action of acids and caustics on the eyes is very rapid and may cause blindness unless washing with water is immediate. Directing a moderate jet of water into the opened eyes from a small flexible hose is very effective. Other methods are to plunge the head into a vessel of clean water and wink the eyes rapidly, or to allow the water from a bubbler drinking fountain to flow into and flush out the eyes.

Often, large bottles of counteracting solutions are placed on special racks in the workrooms, but pre-

(*Continued on page* 1054)

Will Paper Be Affected by Current Price Cutting in Luxuries?

THERE seems to be a great deal of anxiety at this time as to what effect the recent reductions in the price of automobiles and a few other articles of luxury will have on the price of paper.

The Champion Coated Paper Company, of Hamilton, Ohio, has sent a letter to all their customers stating that they of course cannot foresee future conditions with unfailing accuracy, but after giving the matter a great deal of thought, think that the following points are very significant:

I—"Total Fourdrinier machines making book and similar papers (exclusive of bonds, writings, ledgers and news) operating in U. S. A. in 1915 was approximately 400. Additional machines installed or to be installed by the end of 1921 for these same grades is approximately 20, or an increase of 5 percent, while the country has grown some 10 percent during this period, and in addition to this, a large export tonnage has been developed, which will be held more or less for some years. During the five years previous to 1915 there was even a smaller proportion of book machines installed in this country.

II—"Increase of cylinder printing presses in U. S. A. from 1917 to end of 1920 will be approximately 4,000; and, of course, many job presses also.

III—"Taking jobbers' stocks of paper on hand January 1, 1920, as 100 percent, they have decreased every month until September 1, 1920, when they show 26 percent, and the 100 percent January 1, 1920, was far below 100 percent of normal, probably not 50 percent of normal.

IV—"Paper manufacturing costs are not as yet decreasing—in fact, they are still going up—and in not raising our prices for October shipments, we are absorbing additional costs on coal 18 percent, alum 25 percent, soda fiber 4 percent, and many other smaller items. Sulphite and labor costs remain about the same.

"The automobile situation has, of course, affected the price of certain materials entering into their manufacture. Production of automobiles has increased during the past three years some 100 to 150 percent, and no doubt the time has come when this country can no longer absorb so many cars, and so, most of the automobile manufacturers are scrambling to get orders by reducing prices, but at the same time, they are forcing their sources of supply to cut prices also.

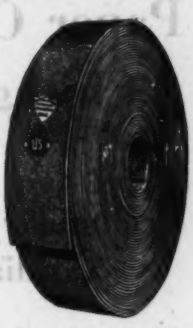
"We can see no similarity between this condition and that of paper. There is right now a bearish feeling among many of the jobbers and paper consumers, but in our opinion there will again be heavy buying within a few weeks, as shelves are bare, and even normal paper consumption in proportion to its production is sure to keep all mills operating full for some years.

"We hope prices will not go higher, but the cost of raw materials is beyond our control, and we cannot reduce until wages and materials are reduced. It does not seem that this can happen to any extent for some months. We have six months of orders on our books and already have an increase of orders and inquiries after the few days of hesitation."

Rubber Goods for the Paper Industry

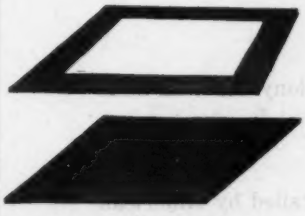
Rainbow Packing

THE paper trade salesmen and the practical factory men of the United States Rubber Company are qualified through study and experience to recommend the right mechanical rubber goods for any condition existing in this industry.



Rainbow Belt

They are ready to assist paper-mill operators by advising as to the best application of mechanical rubber goods in order that the greatest possible service may be obtained for every dollar invested.



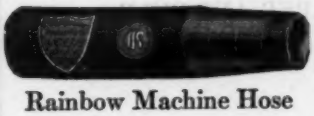
Screen Diaphragms

Cotton Rubber Lined Fire Hose

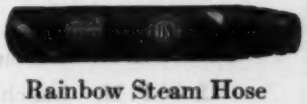
Take advantage of this Company's facilities and experience when in the market for mechanical rubber goods. Through our nearest Branch you can obtain the fullest co-operation of our organization.

Rubber Covered Rolls

Deckle Straps



Rainbow Machine Hose



Rainbow Steam Hose

United States Rubber Company

The World's Largest and Most Experienced Manufacturer of Mechanical Rubber Goods

BELTING	HOSE	PACKINGS	MISCELLANEOUS
Transmission "Rainbow," "Pilot" "Shawmut"—"Giant Stitched"	**Air** "4810," "Dexter"	**Sheet** "Rainbow," "Vanda," "Paramo"	Mats, Matting and Flooring, Plumbers' Specialties, Rubber Covered Rolls, Friction Tape, Splicing Compd., Dredging Sleeves, Hard Rubber Goods, Printers' Blankets, Tubing, Soles, Heels, Jar Rubbers, Moulded Goods
Conveyor "United States," "Grainster"	**Steam** "Rainbow," "Giant," "Perfected"	**Rod** "Wizard," "Rainbesta," "Peerless," "Honest John," "No. 573" and hundreds of other styles in coils, rings, gaskets and diaphragms—	
Elevator "Matchless," "Granite," "Grainster"	**Water** "Rainbow," "Mogul," "Perfected"	**Usco Valves**—	
Tractor "Sawyer Canvas" "Little Giant Canvas"	**Suction** "Amazon," "Giant"	THE RIGHT PACKING IN THE RIGHT PLACE	
Agricultural "Rainbow," "Bengal" "Grainster," "Sawyer Canvas"	**Garden** "Rainbow," "Mogul," "Lakeside"		
	Also Hose for Acetylene, Oxygen, Acid, Air Drill, Auto Radiator, Car Heating, Air Brake, Gasoline, Oil, Hydraulic, Chemical, Coke, Creamery, Discharge, Vacuum, Sand Blast, Spray, etc.		

UNITED STATES RUBBER COMPANY AND ASSOCIATED COMPANIES — US RUBBER SYSTEM

Paper Convocation Week, Congress Hotel Chicago, November 8th to 13th, 1920

Preliminary Announcement of Meetings of Associations Affiliated with the American Paper and Pulp Association to Be Held in Chicago

NOVEMBER 9th.

10:00 A. M. Vegetable Parchment Manufacturers' Ass'n. Old Colony Club, La Salle Hotel.

NOVEMBER 10th.

10:00 A. M. Organization Meeting Paper Board Manufacturers, called by American Paper and Pulp Association. Congress Hotel.

10:00 A. M. Cover Paper Manufacturers' Association—(Adjourning for November 11th meeting in Chicago.) Ypsilanti, Mich.

10:00 A. M. Waxed Paper Manufacturers' Association. Congress Hotel.

10:30 A. M. Wrapping Paper Mfrs. Service Bureau. Francis First Room, Congress Hotel.

NOVEMBER 11th.

SECOND FALL BUSINESS CONFERENCE—AMERICAN PAPER AND PULP ASSOCIATION.

10:00 A. M. Business Meeting. Elizabethan Room.

12:30 P. M. Luncheon and Afternoon Session. Gold Room.

NOVEMBER 12th.

9:00 A. M. American Pulp & Paper Mill Superintendents' Ass'n. Congress Hotel.

9:30 A. M. Book Paper Manufacturers' Association. Blackstone Hotel, Chicago.

10:00 A. M. Binders Board Manufacturers' Association, Monroe, Mich.—(to follow Nov. 11th Business Meeting—A. P. & P. A. in Chicago.)

10:00 A. M. Pulp Manufacturers' Association. Congress Hotel.

10:00 A. M. Organization meeting Woodlands Section, American Paper and Pulp Association. Congress Hotel.

NOVEMBER 13th.

9:00 A. M. American Pulp and Paper Mill Supts. Ass'n. Congress Hotel.

NOTE: The National Paper Trade Association will join the American Paper and Pulp Association in the Luncheon and Afternoon Session at the Congress Hotel.

Reports of
FOUR IMPORTANT EVENTS
TO THE
PAPER INDUSTRY

Sixth National Exhibition Chemical Industries

WEEK OF SEPTEMBER 20, 1920

GRAND CENTRAL PALACE, NEW YORK CITY

Fall Meeting Salesmen's Association
of the Paper Industry

SEPTEMBER 29, 1920

LA SALLE HOTEL, CHICAGO, ILL.

Convention Cost Association
of the Paper Industry

SEPTEMBER 27 AND 28, 1920

WALDORF-ASTORIA HOTEL, NEW YORK CITY

Ninth Annual Safety Congress

SEPTEMBER 27 TO OCTOBER 1, 1920

MILWAUKEE AUDITORIUM, MILWAUKEE, WIS.

Direct from Producer to Consumer

English China Clays Sales Corporation

33 West 42nd Street
New York

Exclusive Representatives of

English China Clays, Ltd.
St. Austell, England

Largest China Clay Producers in the World

500,000 Tons Annually

ECCO CLAYS TRADE MARK

Sixth National Exhibition Chemical Industries

Held on September 20 to 25, 1920, at Grand Central Palace, New York City

THE Sixth National Exposition of Chemical Industries was held the week of September 20, at the Grand Central Palace, in New York City, and was by far the largest exposition as to number of exhibitors, and also in attendance, as well as is interest. The chemical industry is so closely allied to the paper industry in many ways that this exposition is of considerable importance to pulp and paper manufacturers.

It might seem to some that an exposition of this kind wherein the exhibitors are practically the same firms from year to year might grow stale, but this is not the case, as the interest seems to be greater with each one.

The Grand Central Palace is an ideal place for such an exposition and it is to be regretted that this building is now to be changed over into an office building, and the next exposition will have to be held elsewhere, and we believe the move is to have it in the great Armory in the Bronx, which will take about one-half hour to reach from Forty-second street. This new point will relieve the exhibitors of the burden of a great number of the casual, idle sight-seers who have no purpose in visiting the show except to use their tickets and gather up the printed matter which most of them have no use for in the future. Whether it will be a good move or not will not be seen until the next exposition.

It would require altogether too much space to give more than a line to those exhibitors whose product is of interest to this field, and the following list is a partial one of those we believe will be of interest to the readers of THE PAPER INDUSTRY.

During the week of the exposition many meetings were held, at which considerable was said that would be of interest to this industry, but space does not permit us to publish these at this time.

ALBERENE STONE CO.—Exhibit of laboratory construction of Alberene stone, consisting of a typical fume hood, wall table with reagent shelves, sink, peg-board, etc.

ALLEN ELECTROLYTIC CELL CORP.—The Allen-Moore electrolytic cell.

ALLIS-CHALMERS MANUFACTURING CO.—Dust collector, motors, rubber-lined centrifugal pump, pulverator.

AMERICAN ANILINE PRODUCTS, INC.—Full line of colors dyed on felt, leather, wool, cotton, silk and paper, etc.

AMERICAN HARD RUBBER CO.—Hard rubber equipment for handling acids, alkalis, dyes, food products and corrosive chemical solutions. A hard rubber pump shown in operation.

AMERICAN KRON SCALE CO.—Automatic dial scales.

AMERICAN LAFRANCE FIRE ENGINE CO.—Industrial safety devices, fire prevention apparatus, chemical engines and fire extinguishers.

AMERICAN WATER SOFTENER CO.—Water softener.

ANILINE DYES & CHEMICALS, INC.—Full line of paper dyes and colors.

ANTI-HYDRO WATERPROOFING CO.—Liquid chemical compound for rendering concrete waterproof, dustless, oil-proof, acid resisting and chemical resisting.

ARKELL SAFETY BAG CO.—Complete line of "Arksafe" elastic paper linings for shipping packages, plain and waterproofed.

ARMSTRONG CORK CO.—Nonpareil insulating brick for furnaces, boiler settings, kilns and other high temperature equipment; Nonpareil high-pressure insulation for steam lines, and other hot surfaces; Nonpareil cork covering for brine and ammonia lines and other cold surfaces; Nonpareil corkboard for cold storage rooms or wherever constant temperature is required.

ARNOLD, HOFFMAN & CO., INC.—Oils, softeners, gums, starches, pigment and other colors for textile sizing, printing, and finishing, and for use in the paper, chemical, leather and other industries.

ATLANTIC DYESTUFF CO.—The central feature will be a miniature dye-making plant, in addition to which the company will show its various products.

BACHARACH INDUSTRIAL INSTRUMENT CO.—Pressure recorders and gas meters in actual operation; special demonstration showing the application of Pitot tube to the measurement of gases.

BACHMEIER & CO.—Aniline dyes.

BAILEY METER CO.—Working exhibit of meters for water, steam, gases, and various chemicals.

BARBER ASPHALT PAVING CO.—Comprehensive exhibit of native lake asphalts and their products, with special reference to those useful in chemical plants and laboratories. Crude and refined asphalt, mineral rubber, ready roofing, asphalt shingles, preservative paints, high-grade oils for special lubricating purposes, flotation oils.

BARRETT CO., THE—This company joined forces with the General Chemical Co., the National Aniline & Chemical Co., the Semet-Solvay Co. and the Solvay Process Co. in a series of booths containing an instructive and educational exhibit of their products.

BEACH-RUSS CO.—The following machines shown in operation: High-duty vacuum pumps, rotary air compressors, laboratory pumps, acid pumps and heavy liquid pumps.

BECKER, CHRISTIAN, INC.—Analytical and laboratory balances, featuring the chainomatic balances; bullion scales; torsion balances.

BECKLEY PERFORATING CO.—Perforated metals.

BETHLEHEM FOUNDRY & MACHINE CO.—Wide range of castings of Corrosiron. Demonstration by acid test of a comparison of the wearing qualities of Corrosiron against cast iron.

BLACKMER ROTARY PUMP CO.—Models of pumps, with necessary explanatory charts and pictures of the various units made.

BRISTOL CO.—Full line of recording and indicating instruments for pressure and vacuum, liquid level, temperature, electricity, time, motion, speed.

BROWN INSTRUMENT CO.—Comprehensive display of indicative and recording pyrometers, recording and resistance thermometers, indicating and recording instruments for pressure, vacuum, speed, time and operation.

BROWN, PORTABLE CONVEYING MACHINERY CO.—Portable inclined elevator for piling boxes, bags and bales. Portable inclined elevator for loading and elevating loose material. Hand power portable tiering machine for lifting and piling cases, rolls and drums.

BUFFALO FOUNDRY & MACHINE CO.—Vacuum drying apparatus, evaporators, chemical equipment and sugar apparatus. New developments during the past year in Buflovak and Buflokast apparatus.

BURRELL TECHNICAL SUPPLY CO., INC.—Burrell gas analysis apparatus and other testing apparatus.

CALCO CHEMICAL CO.—Dyes and intermediates with demonstration of dyeings on fabrics, paper pulps and lakes.

CARBORUNDUM CO.—Crude carborundum and aloxite crystals; silicon metal; carborundum and aloxite abrasive products, such as grain, abrasive paper, cloth and wheels; carborundum refractory brick and special shapes; silfrax pyrometer protection tubes and muffles.

CARRIER ENGINEERING CORP.—Complete installation of Carrier humidifying equipment in operation, and typical products into the manufacture of which Carrier equipment enters.

CENTRAL SCIENTIFIC CO.—Constant temperature apparatus consisting of electrically heated and controlled drying ovens, vacuum

Maurice A. Knight

This is a reproduction of page 8 in our new circular

MAURICE A. KNIGHT ACID PROOF CHEMICAL STONEWARE AKRON, OHIO, U.S.A.

East Akron, Ohio

Send for a copy of our new fully illustrated circular.

MATERIAL FOR THE CONSTRUCTION OF TOWERS, TANKS, DIGESTERS, FLOORS, ETC.

KNIGHT ACID BRICK

The brick that is made under **2-Ton pressure.**

The brick is made of **3 different clays.**

The vitrified brick that is **Salt glazed.** That's KNIGHT Acid Brick.

Made in two densities, but only one quality—the best.

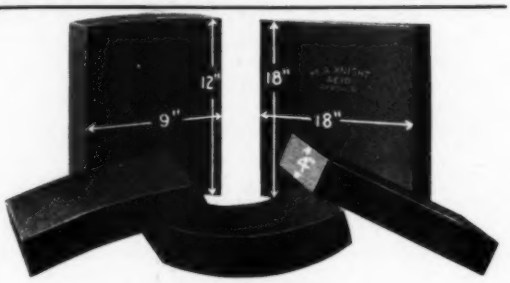


FIGURE 137
ACID-PROOF RADIAL TILE
Made in any size or radius for building towers or tanks.

FIGURE 138
ACID-PROOF TONGUED AND GROOVED TILE
Used for building large tanks or filters. Made in most any size or radius with any size perforations.

FIGURE 135
ACID-PROOF VITRIFIED BRICK
Made in most any size or shape. Standard size 8-in. by 4-in. by 2¼-in. carried in stock. Used for lining towers, tanks, digesters, etc., and for floors. Repressed under 2-ton pressure.

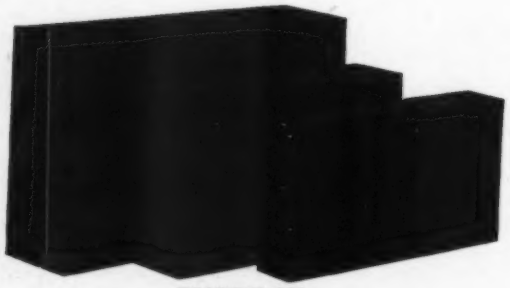


FIGURE 136
LARGE ACID-PROOF TOWER BASE TILE
Used for bridge work at bottom of large sulphuric acid towers for supporting packing. Made in any sizes up to 60-in. by 36-in. by 6-in.

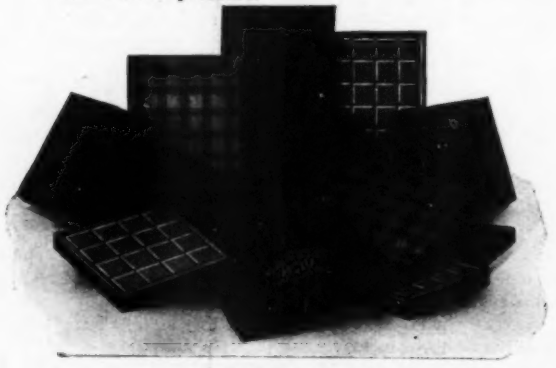
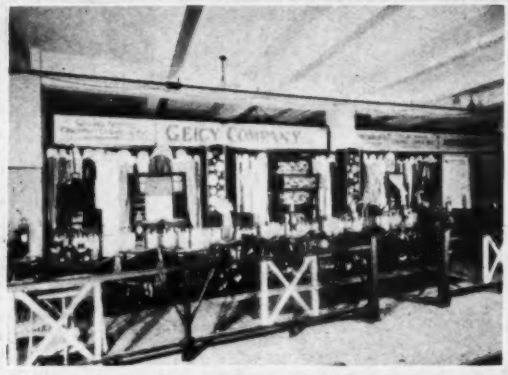
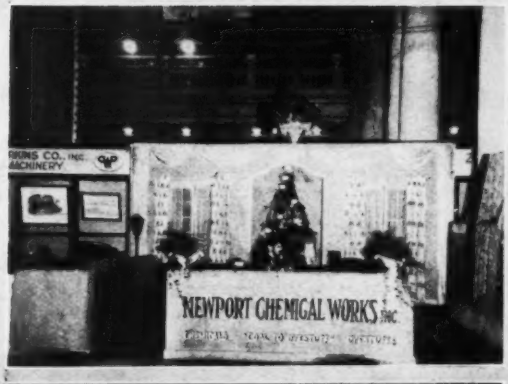
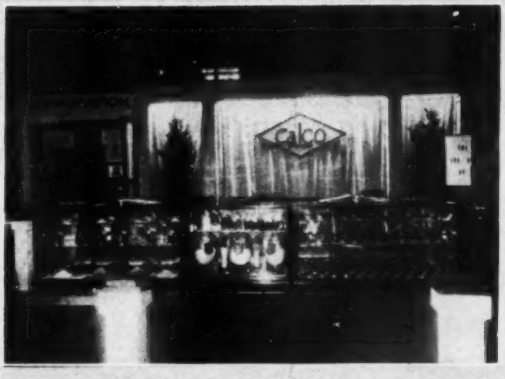


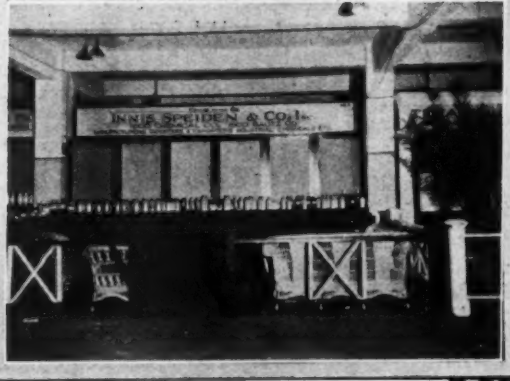
FIGURE 139
ACID-PROOF TILE OR BRICK
For lining digesters, tanks or acid rooms. Made in most any size, design and radius.

We make Acid Proof Brick and Tile in most any size, shape and design for digester linings and perforated tile for Blow Pits. If you do not see what you want, send us sketches with measurements and we will make it.









Geigy Company
E. I. Du Pont de Nemours & Co.
Calco Chemical Company
A. Klipstein & Co.

National Aniline & Chemical Company.
Newport Chemical Works
Aniline Dyes & Chemicals, Inc.
Innis, Speiden & Co., Inc.

JOHN RICHARDSON COMPANY

BOSTON, MASS.

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ENGLISH CHINA CLAY

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OFFER DEPENDABLE SHIPMENTS
AND ABSOLUTELY UNIFORM RUN-
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ovens and water baths; high vacuum pumps; electrically operated laboratory devices; electric furnaces and electro-titration apparatus; oil and fuel testing equipment; physicochemical apparatus.

CHAPMAN VALVE MFG. CO.—Full line of valves.

CHEMICAL CO. OF AMERICA, INC.—Dyes and intermediates.

CHEMICAL EQUIPMENT CO.—Ceco products, comprising acid valves and pumps, printing systems, spray systems, experimental vacuum evaporator. All except the latter in operation.

CHEMICAL PUMP & VALVE CO.—Centrifugal pumps, packingless valves and fittings for chemical works.

CLEVELAND INSTRUMENT CO.—Thermo-electric and resistance types of indicating and recording pyrometers; multiple station circular chart recorder.

CLIPPER BELT LACER CO.—Three different types of clipper belt lacing machines; demonstration of belt lacing.

CONSTANT PROCESS CO.—Sulphuric, muriatic and nitric acids, fuming sulphuric acid, oleum, mixed acid, salt cake.

CRANE CO.—Line of piping, valves and fittings.

DAVIDSON, M. T., CO.—Steam pumps for general power plant service and for acid.

DAVIDSON CHEMICAL CO.—Pyrites ore, cinders, sinter, copper precipitate, sulphuric acid, acid phosphate, double super-phosphate, magnesium fluosilicate, precipitated silica and silica gel.

DEVINE, J. P., CO.—Display of vacuum apparatus, such as drum driers, chamber driers and vacuum pumps; also an exhibit of "Kek" pulverizing mills.

DIAMOND STATE FIBER CO.—Vulcanized fiber in sheets, rods, tubes, cans, sample cases, trunks; condensite celoron waterproofing insulation.

DINGS MAGNETIC SEPARATOR CO.—Three magnetic separators in operation for the treatment of material submitted.

DORR CO., THE—Working installation of Dorr agitator, tray thickener and pump demonstrating methods of mixing and dewatering applicable to chemical and industrial processes; small working models of Dorr equipment.

DOW CHEMICAL CO.—Chemicals: pharmaceutical, industrial, heavy; dyes; intermediates; insecticides.

DU PONT DE NEMOURS, E. I., & CO.—This company exhibited products of the following divisions: Lithopone, dry colors and pigments division, chemical products division, acids, and heavy chemical division and dyestuffs sales division. Special attention given to the display of dyes.

DURIRON CASTINGS CO.—Comprehensive selection of Duriron apparatus, covering standardized designs of regular equipment and new equipment. First showing of the industrial film "The Story of Duriron."

ECONOMY ENGINEERING CO.—Miniature oil warehouse containing economy steel barrel racks and tiering machines; full-size electrically driven tiering machines; full size hand power tiering machines; one unit economy steel barrel rack, full size.

ELECTRO BLEACHING GAS CO.—Finished products which have required the use of liquid chlorine in the process of their manufacture.

ELECTRON CHEMICAL CO.—Allen-Moore electrolytic cell.

EXCELSIOR DYESTUFFS & CHEMICAL CO.—Dyes and chemicals.

FALCON DYE & CHEMICAL CO., INC.—Aniline colors.

FOAMITE FIREFOAM CO.—Fire extinguishers of the smaller type using foamite and firefoam, with demonstration of the effectiveness of these extinguishers in smothering fire.

FOXBORO CO., INC.—Recording and indicating instruments for pressure and vacuum, hydraulic gages, combinations of recording thermometer and temperature controller. CO_2 recorder in operation, and other instruments.

GEIGY CO., INC.—Dyes and colors.

GENERAL CHEMICAL CO.—Working model of the latest type sulphuric acid tank car; 5-ton model of the new Herreshoff for roasting ores, in operation daily; display of reagent chemicals.

GENERAL ELECTRIC CO.—Electrical equipment.

GENERAL FIRE EXTINGUISHER CO.—Fire fighting appliances.

GLAMORGAN PIPE & FOUNDRY CO.—Working model of continuous gas-fired limekiln and standard flaking and congealing machine; nine compartment filters and standard Duplex exhauster.

GLENS FALLS MACHINE WORKS—Demonstration of rotary sulphur furnace for production of SO_2; model of a Knot & Silver screen for use on either chemical or mechanical wood pulp.

GOTTESMAN, M., & CO., INC.—Industrial chemicals for the paper and pulp industry, such as sulphate of soda, sulphate of alumina, bleaching powder, china clay, casein, rosin, blanc fixe and soda ash.

GOULDS MANUFACTURING CO.—Line of pumping machinery suitable for use in chemical plants.

GRINNELL CO., INC.—Grinnell automatic sprinkler and other Grinnell fire-protection devices. The Grinnell automatic sprinkler shown in operation periodically throughout the exposition.

HAUSER-STANDER TANK CO.—Tank of red gulf cypress lined with chemical lead with joints burnt in by hand; vacuum filter tank of long leaf yellow pine; methods of construction of wooden tanks.

HAYS, JOSEPH W., CORP.—Power plant instruments.

HOOKER ELECTROCHEMICAL CO.—Bleaching systems.

HUYCK, F. C., & SONS—Woolen filter cloth.

INDUSTRIAL FILTRATION CORP.—Zenith continuous rotary filter, Zenith continuous rotary hopper dewaterer and Zenith open-tank type filter. The Zenith rotary filter will be in operation in connection with a complete filtration unit for this type of apparatus.

INNIS SPIEDEN & CO., INC.—Chemicals.

INTERNATIONAL NICKEL CO.—Monel metal, natural nickel alloy, resisting alkalis, most acids, superheated steam, high temperatures and corrosion.

INTERNATIONAL SALT CO. OF NEW YORK—Salt in all grades.

KALBFLEISCH CORPORATION—General line of mineral acids, some of the allied salts and products particularly interesting to paper manufacturers.

KLIPSTEIN, A., & CO.—Chemicals and colors.

KNIGHT, MAURICE A.—Acid-proof chemical stoneware apparatus, selected to convey a good idea of the use of this material in the paper industry.

LAKEWOOD ENGINEERING CO.—Industrial cars.

LAMIE CHEMICAL CO., INC.—Dyes and chemicals. The feature of the exhibit will be Flaming Red, a new dyestuff used in the paper and silk industry.

LAMMERT & MANN CO.—Lammert rotary vacuum pumps, for vacuum or pressure.

LEAD LINED IRON PIPE CO.—Galvanized lead-lined iron pipe, flanged lead-lined valves and fittings, screwed lead-lined fittings, tin-lined iron pipe and fittings.

LOOMIS-MANNING FILTER DISTRIBUTING CO.—Standard filters and a filter in section showing interior construction and details; glass working model showing operation.

LUNGMOTOR CO.—The Lungmotor for resuscitation in cases of apparent drowning, asphyxiation, electric shock, narcotic poisoning, strangulation and collapse during anæsthesia.

LUNKENHEIMER CO.—Valves in bronze, iron and cast steel suitable for various operating conditions and for pressures up to 350 lb. per sq. in. and a temperature of 800 deg.; engineering specialties.

LUZERNE RUBBER CO.—Hard rubber pipe, fittings, buckets, and special parts for the chemical industry.

MAGNESIA ASSOCIATION OF AMERICA—Samples of different kinds of 85 per cent magnesia; diagrammatic chart showing manufacture in process; miniature samples of 85 per cent magnesia products.

MAGNETIC MANUFACTURING CO.—Demonstration of a laboratory-size high-intensity magnetic separator for ores and minerals.

MATHIESON ALKALI WORKS, INC.—Caustic soda, soda ash, Virginia soda, bicarbonate of soda, bleaching powder, liquid chlorine, chlorine solvents; materials produced from these products.

METALS DISINTEGRATING CO., INC.—Zinc dust, lead dust, tin dust, copper dust, litharge.

MINER-EDGAR CO.—Cotton solutions for coating split and artificial leathers; solvents for cotton and celluloid; wood alcohol, acetone, methyl acetone; prepared clays for paper and paint manufacturers.

MONEL METAL PRODUCTS CORP.—In booth with International Nickel Co., showing monel metal.

GEIGY COMPANY, Inc.

89 Barclay Street NEW YORK CITY

ANILINE COLORS

Selling Agents for J. R. Geigy S. A., Basle, Switzerland
Established 1764

Selling Agents for CINCINNATI CHEMICAL WORKS, Inc., Norwood, Ohio
(Successors to The Ault & Wiborg Company—Dye Works)

BASIC	ACID	DIRECT
Fuchsine Crystals	Scarlet 2 R	Chicago Red
Fuchsine Powder	Scarlet 2 R B	Chicago Red 3 B
Malachite Green H. P. Crystals	Croceine Scarlet 3 B X	Sun Orange R
Methylene Blue D Pure	Acid Bordeaux	Direct Yellow 2 G
Setoglaucine (Patent Blue Shade)	Croceine Orange N L	Paper Yellow
Methyl Violet B S	Metanil Yellow	Diphenyl Green K G C
Methyl Violet 6 B	Helianthine G	
Methyl Violet R	Azo Yellow N R C	
Methyl Violet 5 R	Acid Green M	
	Erio Green Extra	
	Erioglaucine Supra	
	Acid Violet T P S Conc.	

NEWS BLUE

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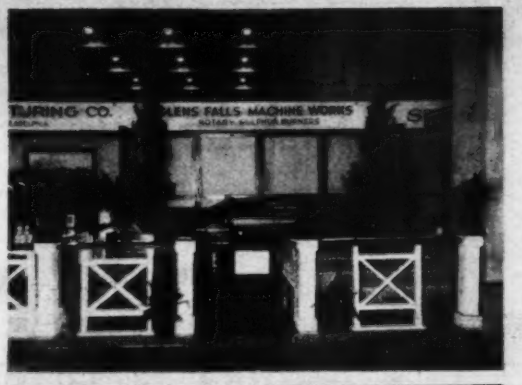
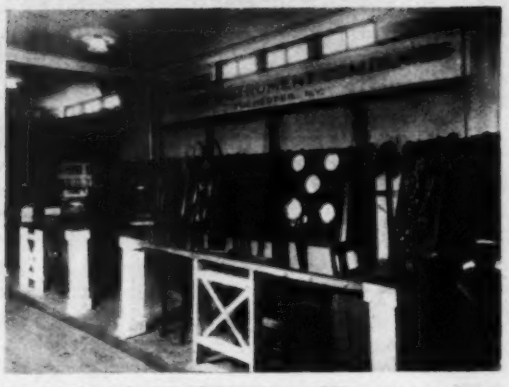
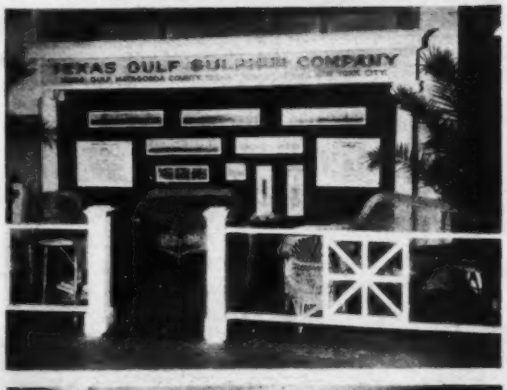
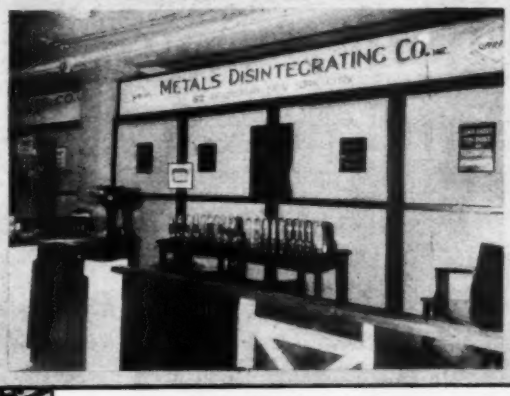
BRANCHES

Boston Providence Philadelphia Toronto Chicago Columbus, Ga.









Glens Falls Machine Works
Thwing Instrument Company
Texas Gulf Sulphur Company
Metals Disintegrating Company

Pennsylvania Salt Manufacturing Company
Taylor Instrument Companies
Pneumercator Company, Inc.
Arnold, Hoffman & Co., Inc.

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We are manufacturing an extensive range of colors for dyeing, in the pulp, for dipping, and for coating. We probably have

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Branch Sales Offices:
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CHICAGO PROVIDENCE

Paper Makers Chemicals

Casein (Sheffields)

Talc

Caustic Soda (Isco Chemical Co.'s)

Bleaching Powder (Isco Chemical Co.'s)

Tinting Blue

Innis Speiden & Co.

Established 1816 Inc. Incorporated 1906

46 Cliff St., New York 120 W. Kinzie St., Chicago
84 High St., Boston 219 S. Front St., Philadelphia

The White Tar Aniline Corporation

56 Vesey St., New York Works, Kearny, N. J.

Aniline and Pigment Colors for Papermakers

WHITAR colors are of highest concentration and always run uniform. Special shades of colored paper or samples of dyestuff matched and complete formulas furnished.

MONO CORP. OF AMERICA—Automatic recording instruments for analyzing CO_2, CO, SO_2; recorder for oxygen and hydrogen.

MORSE CHAIN CO.—Samples of chains, showing the Morse rocker joint, from ½ in. pitch to 3 in. pitch in several widths illustrating the chain as used for ½ hp. to 5,000 hp. In charge of exhibit:

NASH ENGINEERING CO.—Hytor compressors and vacuum pumps in operation; Jennings pump, motor and turbine driven, for handling combinations of liquid and gas.

NASSAU VALVE & PUMP CORP.—Chemetal acid-resisting valve and centrifugal pumps.

NATIONAL ANILINE & CHEMICAL CO.—Scene of wax figures costumed in the latest modes and artistically grouped on the piazza of a country house. All the materials used in this scene will be dyed with the "National" colors. The central setting flanked on either side by exhibits of the company's technical products.

NATIONAL GUM & MICA CO.—Pulp and other colors; permasol marking ink, crayons, etc.; synthetic perfume bases; adhesives.

NATIONAL LAMP WORKS—Display of lamps.

NEWARK WIRE CLOTH CO.—Wire and wire cloth, chemists' testing screens, monel metal filter cloth; loom for weaving in operation.

NEW ENGLAND TANK & TOWER CO.—Tanks.

NEWPORT CHEMICAL WORKS, INC.—Dyes and colors for paper making.

N. Y. COLOR & CHEMICAL CO.—Dyes and colors for the textile, paper, leather and lake trades.

NIAGARA ALKALI CO.—Caustic potash, caustic soda, bleach powder, permanganate of potash and muriatic acid.

NORTON CO.—Representative shapes of laboratory ware and larger refractories made from alundum and crystolon; grinding wheels and abrasive grain; electrically fused magnesia.

OBERMAYER, S., CO.—Hott-Patch furnace cement for power and chemical plants. A small electric furnace will be used for demonstration of the product.

OLIVER CONTINUOUS FILTER CO.—A small size Oliver continuous filter in operation.

PENNSYLVANIA SALT MANUFACTURING CO.—Mineral acids, alums, alumina, lye, gas purifiers, caustic soda and soda products, sulphate of alumina for paper and color making, filtration, dyeing and tanning, chloride of lime, liquid chlorine, chloride of alumina, aluminate of soda and zirconia, Greenland kryolith.

PERMUTIT CO.—Demonstrating outfits of Permutit water softeners and filters; photographs and drawings of commercial-size apparatus.

PHILADELPHIA DRYING MACHINERY CO.—Three types of driers: Cabinet tray, tunnel truck tray and continuous apron.

PHILADELPHIA QUARTZ CO.—Silicate of soda in its various forms, and its application in industry.

PNEUMERCATOR CO., INC.—Various models of liquid measuring devices.

POWER SPECIALTY CO.—Uses of superheated steam in the chemical industry and the special developments of the Foster superheater for chemical manufacturers.

POWERS REGULATOR CO.—Automatic temperature regulators for hot water tanks, dyeing and bleaching machines; automatic water mixers, steam and water mixers, steam pressure reducing valves and other automatic temperature control apparatus.

PRECISION INSTRUMENT CO.—CO_2 and SO_2 recorders; single, 2 in 1 and 3 in 1 recorders; gas meters, gravitometers and calorgraphs; single, 2 in 1, 3 in 1, 4 in 1 and 5 in 1 gages, flue gas analyzers and micrometer gages.

PROCTOR & SCHWARTZ, INC.—Proctor 12-tray laboratory drier; models of Proctor 3-conveyor drier for cotton, hair, wool, etc., and of Proctor 3-truck drier for chemicals, colors, etc.; samples of chemicals, colors, etc., dried in Proctor driers; projectiscope in operation showing Proctor drier installations.

QUIGLEY FURNACE SPECIALTIES CO.—Furnace refractories; hytempite, for bonding firebrick and granular refractories; carbosand for furnace linings and repairs; insulbrix, for insulating furnace walls; heat-treating and powdered coal equipment.

REFINITE CO.—Water softeners.

REPUBLIC FLOW METERS CO.—Steam, water, air and gas flow meters; low differential gas meter, Gebhardt portable indicating steam meter, CO_2 recorders, orifices and Pitot tubes.

REVOLVATOR CO.—Revolving and non-revolving, hand-power and motor-driven revolvators.

SCHAEFFER & BUDENBERG.—Recording thermometers and gages; a new type of thermometer not hitherto shown.

SCOTT, ERNEST, & CO.—Photographs of machinery and apparatus installed by the company for the extraction of oils from nuts, seeds, tankage, fish waste; photographs of Scott evaporator for recovery of gylcerine, caustic soda, paper pulp spent liquors, etc.; photographs of vacuum driers; plants for manufacture of ammonia, distilling fatty acids, manufacture of glycol and glycerine.

SHERMAN-WILLIAMS CO.—Chemicals and colors.

STEIN, HALL & CO.—Starches, gums and dextrines. In charge of exhibit: L. W. Peabody.

SULLIVAN MACHINERY CO.—Operating model of air-lift pump showing the application of the air-lift principle to the pumping of liquids.

SWENSON EVAPORATOR CO.—Two experimental size evaporators.

TABOR PUMP CO.—Pumps.

TAGLIABUE, C. P., MFG. CO.—Witham controllers for maintaining uniform temperature in paper machine driers; P & W condensate controller and liquid level controller.

TAYLOR INSTRUMENT CO.—Instruments.

TEXAS GULF SULPHUR CO.—Sulphur.

THWING INSTRUMENT CO.—Temperature recording and indicating apparatus and some new paper testing instruments.

UEHLING INSTRUMENT CO.—New CO_2 recording instrument for continuous measurements of percentage of CO_2; Uehling pneumatic pyrometer, draft gages and recorders, draft analyzers, pressure gages and recorders.

UNION STEAM PUMP CO.—Complete pumping equipment for the chemical industry; vacuum and pressure pumps, steam, belt and motor driven.

UNION SULPHUR CO.—Sulphur.

UNITED FILTERS CORP.—Working model of an American filter; Sweetland and United filter presses and samples of filter press plates and cloths.

UNITED LEAD CO.—Chemical lead-lined pipe fittings, valves, tanks; chemical lead-covered coils; hard lead centrifugal acid pumps.

UNITED STATES CAST IRON PIPE & FOUNDRY CO.—Barometric counter-current condenser in section with descriptive diagrams of operation; samples of casting for chemical and sugar industry.

UNIVERSAL ANILINE DYES & CHEMICAL CO.—Direct colors.

VALLEY IRON WORKS.—Autoclaves and sulphonators in laboratory and semi-commercial sizes.

WALLACE & TIERMAN CO., INC.—Special chlorine control apparatus for use in bleaching paper and textiles, deodorizing, oxidizing and other chemical purposes; chlorine control apparatus for sterilizing water supply, sanitation of swimming pools and disinfection of sewage; valves, gages and flow meters for handling corrosive materials.

WARNER CHEMICAL CO.—Nelson electrolytic cell.

WESTINGHOUSE ELECTRIC & MFG. CO.—A.c. and d.c. specially impregnated motors, arc furnace regulating and control panels, industrial heating appliances, starting switches, control switches, etc.

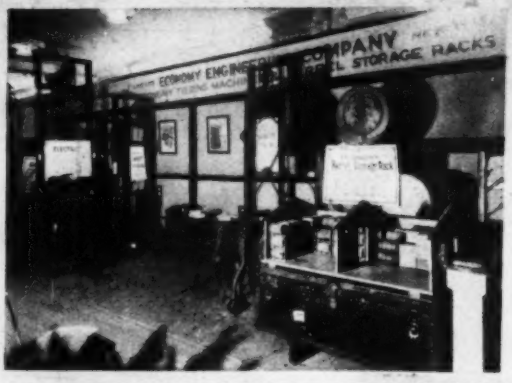
WHEELER, C. H., MFG. CO.—Radojet air pump model, showing the inside; single and double stage radojet air pumps; duplex condensate pump; automatic steam pressure and temperature regulators.

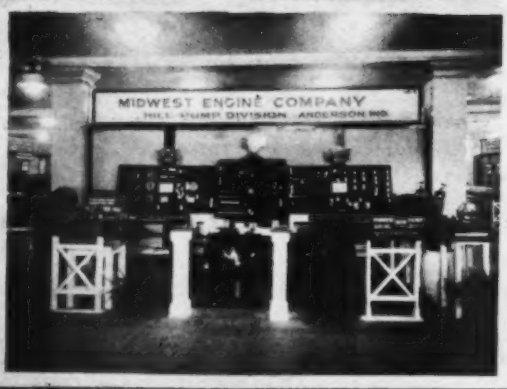
WHITLOCK COIL PIPE CO.—Special apparatus for heating water for use in chemical and industrial plants; coils of iron and steel pipe and copper tubing for use in chemical processes.

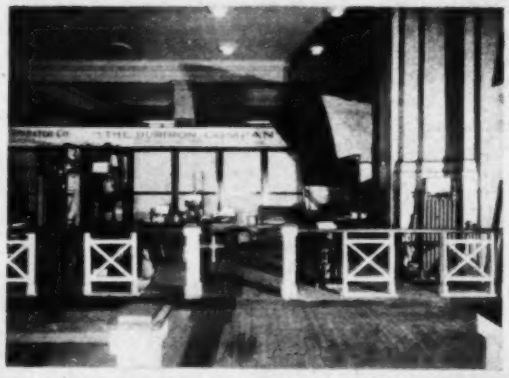
WIDNEY TEST LABORATORIES.—Widney Modulimeter.

WORTHINGTON PUMP & MACHINERY CORP.—Pumps and compressors.

ZAREMBA CO.—Large-size photographs illustrating characteristic Zaremba evaporator installations.

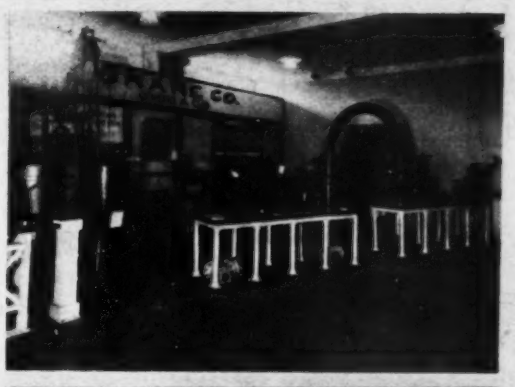


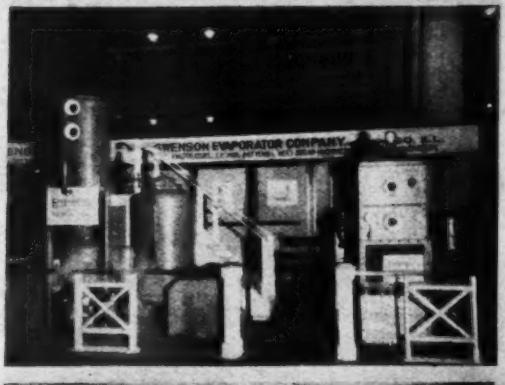


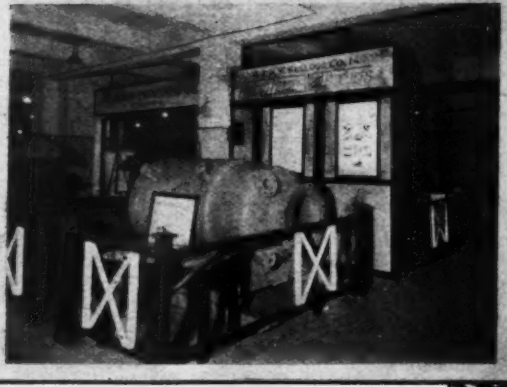


Westinghouse Companies
F. C. Huyck & Sons
The Dorr Company
Midwest Engine Company

Economy Engineering Company
Nash Engineering Company
Dings Magnetic Sepaartor Company
The Duriron Company







Crane Company
Glamorgan Pipe & Foundry Co.
Buffalo Foundry & Machine Co.
Maurice A. Knight
Swenson Evaporator Co.
The M. W. Kellogg Co.

• LABOR •

It is only by labor that thought can be made healthy and only by thought that labor can be made happy; and the two cannot be separated with impunity.

—*Ruskin*

GEORGE K. GIBSON
President of the Salesmen's Association of the Paper Industry

Sales Manager of the
Wausau Sulphate Fiber Company
Mosinee, Wisconsin

Fall Meeting of the Salesmen's Association of the Paper Industry

Held on September 29, 1920, at the Hotel La Salle and Edgewater Beach Hotel in Chicago

A GROUP of more than fifty salesmen, representing some of the country's largest paper and pulp manufacturers, attended the first fall meeting of the Salesmen's Association of the Paper Industry in Chicago on September 29, 1920. The morning and afternoon sessions were held successively in the Hotel LaSalle and the Edgewater Beach Hotel of that city, and the distance of six miles between them was covered in automobiles, providing a period of recreation in the day's proceedings, which was highly enjoyable.

The prompt manner in which the program was conducted occasioned the remark that the president "prided himself on his terminal facilities."

The intense interest expressed in everyone's face from the time the gavel brought the meeting to order until the last word was spoken was convincing evidence that the men were held close to the speakers, and received all the inspiration and knowledge it was intended they should get when the committee arranged such a complete and instructive program.

Believing that every word in that wonderful day's proceedings is of vital interest to those who are concerned in the manufacture of pulp and paper, THE PAPER INDUSTRY herewith presents a transcript of the entire proceedings to its readers:

WEDNESDAY MORNING

September 29, 1920

The meeting convened at 10:00 a. m., President George K. Gibson presiding.

The President: Gentlemen, come to order.

The first item of business will be the reading of the minutes of the previous meeting, the meeting of April 14, by our Secretary.

Dr. H. P. Baker read the minutes of the meeting held in New York on April 14.

The President: Gentlemen, you have listened to the reading of the minutes. Are there any alterations or corrections?

I would like to have the minutes corrected to show that while I was nominated by the Nominating Committee, I did not serve on that committee at the time I was nominated. Also the name is George K. Gibson and not George W.

Are there any other alterations or corrections?

Mr. J. L. Fearing: Mr. Hussey's name should be John E. A. Hussey.

The President: If there are no further alterations or corrections, the minutes will stand approved as read. I had hoped to dispense with the calling of the roll, but there have been so many requests for it, that we will have it next.

Dr. Baker called the roll.

The President: We have the following applications, and we thought it would be a good thing at this opening meeting to pass on them: C. H. Phipps, employed by the George H. Mead Company. Gentlemen, what will you do with the application of Mr. Phipps? It has been approved by the Membership Committee.

The application of Mr. Phipps was accepted unanimously.

The President: We have the application of Mr. Carl A. Hubbard, Bryant Paper Company, Kalamazoo.

Mr. Hubbard's application was unanimously accepted.

The President: Thomas D. Earle, Plainwell, Michigan.

Mr. Earle's application was accepted unanimously.

The President: We are delighted to welcome these three new members.

You can see somewhat the growth and extent of this Association by the roll call. We have made progress and we have made growth.

Now, gentlemen, before we start the next order of business, you will please listen to some remarks by your President. First of all, when you registered, you were presented with a button. On April 14 you learned from the reading of the minutes of the first meeting that the Association offered a prize of ten dollars to the man who would send in the best design for a button. The design that your Executive Committee and officers chose was this one you are wearing today. This was designed by Mr. Frederick W. Main, our First Vice President, who gets the reward of ten dollars, and I would like to make it the unanimous action of the Association that the Secretary be empowered to draw a warrant for ten dollars for Mr. Main. All who are in favor, signify by saying "aye."

It was unanimously carried.

Mr. Main: The question is not open for debate. I rise to a point of order.

The President: Mr. Main, you are out of order.

Mr. Main: I wish to say that the very liberal reward is donated to the Association, and I feel very great pleasure in having my simple little design accepted. My thought was that we want to advertise our business. Our first message is paper. The other small letters are easily explained.

The President: Of course, gentlemen, we have no right to tie any strings to the money that Mr. Main gets. If he wishes to donate it to the Association, we will be glad to receive it, but we want him to know that we didn't offer the reward with any strings tied to it.

I think it is particularly important that every member wear the button. Wear your buttons prominently all the time. You will be surprised, as you go around hotel lobbies—as you will be likely to do within the next two or three months—how many men in the paper industry are wearing this button. I think it is a handsome design, and I congratulate you, Mr. Main.

Now, the next thing is badges. You will notice on my badge there is a prominent George and a little Gibson. That is accounted for in this way: Down East men are very fond of their family names. Out west we men are Christians and we are fond of our Christian names, so we have made the Christian name the prominent thing. Boys, it's an open sesame to fraternity. You know you can't get next to a fellow and be a brother to him when your talk is "Mr. Gibson," "Mr. Ford" and "Mr. Main," and the like. My suggestion is that you drop all these formalities, particularly when you meet each other, and let it be "George" and "Fred," and "Charley." Don't have that gushy familiarity, but a real, heart-to-heart sentiment.

What good does it do, men, to clasp hands and be hand-to-hand when you are not heart-to-heart, and you can get to a man's heart by calling him by his first name? When we all understand that we are waiving these formalities, it does not mean a desire to get familiar, but a desire to be closer. Let's start with this meeting and let it be "George" and "Fred," and so on.

For instance, I will give you an illustration. Stand up, Fred. (Mr. Main arose.) Fred, old top, I'm mighty glad to see you. Let the handclasp be a good one. Put it down good and hard. (They shake hands.)

Mr. Main: Attaboy.

President's Address

The President: I congratulate this Association, and the message I have to bring to you is this: That we are growing. Growth is always an index of progress, and this Association is growing as you will learn exactly from the report of the Secretary-Treasurer and your Committee on Membership.

You remember the first appeal that the President put out in the first letter was that we might have more members, and that it seemed to be the most prominent and the most important thing that we increase our membership. I am delighted that the boys have gone to it, and that we are measuring our progress with the growth of the organization.

In our Executive Committee meetings we have had some problems to consider. One is the matter of membership. All of you have been advised of a proposed change that we want to make in the membership clause of the Constitution. That is going to limit our Association to the pulp and paper salesmen, and when you limit it to the salesmen and sales managers, and the men who have to do with the sales in the paper mills, that limits our Association to a select number, widely scattered over this country.

We have a large number on the Atlantic Coast, on the Pacific Coast, and we have mills on the lakes, Lake Superior, and also down on the Gulf of Mexico. I don't want any of you to feel downcast over the comparatively small number that we find here this morning.

In the first place, we are calling this meeting promptly at ten o'clock. There will be an increase in our number during the

day and during the morning, but the response to this first meeting has been fine. We must take into consideration the fact that we are only six months old. This is the first meeting we have called. The present membership indicates the cream of the Association, and a finer bunch no one could ask to see. As a composite, I think you are the handsomest bunch of male humanity that I have looked at for a long time.

Need for More Vice-Presidents

Then right along with what I want to say is this: The problem of keeping up the interest in the organization has been threshed over in the two executive meetings, and your officers and your Executive Committee have come to this conclusion: That during the day we will ask you under the authority of your Constitution to elect two more Vice-Presidents.

Now, it is going to be more or less impossible to get a large meeting in any portion of the United States of the entire membership, scattered as it is all over the United States. However, we figure that we can maintain the interest and build the interest and keep it up by having group meetings in the larger paper centers in the United States like, for instance, Chicago, the Miami Valley, the New England States, possibly in Watertown, and later out on the Pacific Coast. We feel that we ought to have an executive officer in each one of those large paper centers. Under our Constitution as it stands now, we are entitled to four. We can increase it any time to six or more, if it is necessary, but I have felt—and I know it is the opinion of your exeutive officers, that at this time, and at this first meeting, where this business comes actively before us, we ought to set the precedent of having executive officers like Vice-Presidents here in Chicago, one down in Miami Valley, right away.

You may not always have your presiding officer at your meeting, but if he happens to reside in Chicago, he will be pretty sure to be. It seems wise now that we should set that precedent, that a Vice-President be located in Chicago and one in Miami Valley, and possibly later on in Watertown, or any other section.

In New England, we have our First Vice-President. He is down there where he and his associates may call together group meetings during the year, where it isn't expensive to get to those meetings. We will all be notified so that if any of us happen to be in those sections at that time, we can go, and it won't mean any particular expense to us.

We believe that it will be a good thing to inaugurate this system of having in the larger centers these officers and having these group meetings during the year. Then we can have an annual meeting here at the time the Pulp and Paper Association have their meeting, as they are going to have this year in November. We can have these group meetings wherever these executive officers are in these larger centers, and I think it is a policy that is bound to generate a great amount of interest.

Here in Chicago, since June 29, we have forged ahead in interest and in continual application for membership, and the other day the different committees that have been meeting here had a meeting. We have gotten acquainted. You would have been amazed, as I was, at our June meeting, to see that we men who have lived here five or ten years, who have known of each other in our respective work, had absorbed a lot of prejudices, a lot of pre-judgment of each other. All we did for the first part of the meeting was to introduce each other. We have been almost touching elbows for years and years, but we had to come to one of these meetings to get acquainted.

One of our prominent members said, "George, if the Association never does anything more than to have brought us men in Chicago together, it is worth all that it has cost. I have met men I have known for years in my own line of business. I have sat down and gotten my legs under the table with him, and I find that he is just as fine a fellow as I think I am. I am tickled pink to meet him and glad to welcome him as a brother in the industry."

That has been going on here. Even some of our Chicago members said, "Why can't we have a meeting every month and have a Dutch lunch, and talk over the question of salesmanship and the salesmen's association?"

There is no reason why we can't. If we adopt this plan of having an executive officer of the Association in all the large paper centers, as your committee will recommend to you from time to time, we feel that they can go on and maintain the interest of the Association by frequent meetings and work out the plans of the Association under the jurisdiction of your executive officers and the committee. At the proper time, I will call for nominations of those officers, if it meets with your approval.

Gratifying Endorsements

I want to tell you one fine thing that came out of that June 29 meeting, a striking thing that I know you will all be glad to hear about, and I think it is a particularly fine compliment to the Association. We held a membership meeting in Chicago. Mr. Russell and I happened to be the only charter members out here. We came from New York out here and we were alone among all our brethren here in Chicago. We talked it over and decided to call the boys together and lay the thing before them.

I stated the objects of the meeting. I said, "Men, will you authorize us as a committee to issue a call for a membership drive on June 29?" They said, "Go ahead. Go as far as you like. We will back you up."

We issued the call. We had some forty or forty-five present. They listened to me for an hour and a half in a presentation of our aims and purposes. Some twenty odd were signed up at that meeting. We came down to this room and had a dinner together. We had a couple of speakers talk on salesmanship problems, and then we adjourned at 7:45.

After that meeting, Mr. Joseph Fearing, of the International Paper Co.—I should say Joe Fearing—went back to his office and either that night or the next morning wrote a report of that meeting to Mr. Dodge. On the second of July, Mr. Dodge caused somebody from his organization to be sent over to our Secretary-Treasurer's office with an envelope which contained a check for $475, covering 17 applications for membership, headed by Chester W. Lyman, manager of sales.

Now, I didn't see Mr. Fearing's report, but he casually told me that he made a report to Mr. Dodge. I hadn't seen Mr. Dodge, but I heard what was done. I knew Mr. Fearing, so I just put two and two together. It didn't take very long to figure what the details of that transaction were.

I have been particularly gratified in the past six months to have word from Henry Mead, of George H. Mead Company, and other executive officers of other big pulp and paper mills, that they were in hearty accord with the purposes of the Salesmen's Association, that they were solidly back of us.

We have a fine, growing, splendid body of the picked men of the industry, and it is my hope and aim that within the next year or two we can muster five hundred members of this Association, and as far as I can find out, that will clean up about all that we can ever hope to get.

Our time is limited. I am almost up to my time now, but I can't let go of you men without speaking of one thing that I believe is uppermost in your minds. I don't believe there is a man present who hasn't had, within the last week, some customer, jobber or consumer say, "Well, Henry Ford started something, didn't he?"

The Henry Ford Example

I have heard so much of that within the last week that that name Ford—well, I have almost crossed it out of my list of names until Arthur Ford of Massachusetts became a member of the Association. He is the only Ford I know of who doesn't make me see red when his name comes before me.

I want to say this: Henry Ford, like all the rest of our manufacturers, walked up by gradation the steps of high prices of the cost of manufacture to the top of the building called high price in this country, just as we all did. We went up in gradation, in steps, as conditions compelled us to, but Henry Ford got to the top and after waiting for a while, Henry jumped off the top of the high building down below, and said, "All you fellows follow me. We are going to jump down to pre-war prices in one full swoop, in a few minutes."

Now, then, men, of all the silly things, it does seem to me that Henry Ford's example is the last one to follow, and I think you will find, as the days go by, that less and less of the manufacturers will have anything to do with that policy, and not only that, our customers and our friends will see the folly of it, for it is a most fallacious piece of manufacturing economics.

He says in his statement that he is going back to pre-war prices, that we must go back to pre-war prices. They are here and we might as well accept them now.

They are **not** here by a long shot. If we were going back to pre-war prices on our commodities and tomorrow you issue pre-war prices on your paper, what about the pre-war prices on labor? Are you going to bring them down in the same way? How about your pre-war prices on coal? How about your pre-war taxes? Is the Government going to follow Mr. Henry Ford and put in the pre-war taxes and wipe out all the income taxes, and surtax, and go down to pre-war basis? Not on your daguerreotype! They are not.

How about pre-war prices on all raw materials? It took some five years to go up. We went up in an orderly way, and the thing that we have all been congratulating ourselves on is that we will come down in an orderly way. Henry Ford's own statement shows that he is going contrary to the rules and principles and laws of sane economics. He says he is to lose money on the orders for 143,000 cars he has on hand.

Now, Henry Ford may have made sufficient profits in his operations during the war to allow him to lose a large amount of money, but how about the great host of smaller manufacturers all over the country in every line of industry; also all the

merchants who have had to stock up for six months ahead and pay prices that were high, and in goods like woolens, textiles and leather goods, they have found that their manufacturing costs have sharply dropped. Are they going to sell those goods at a price that wouldn't enable them to buy again? I will tell you this thing: That if Henry Ford's example obtains in this country to any great extent, you are going to have disasters, and you are going to have bread-lines and possible riots, and all of those tremendous post-war disasters that so far we have been able to avoid.

If there ever was a time when we need a sane body of sane men who can go out and preach sane economics and sane conditions and keep men sane and thinking coolly, it is now, and we are the body of men in our industry that will have to do it.

Let me tell you, an organization like ours increases in value by growth, not numerically alone, but by the growth of each one of our members and every man of you, for instance, who will read and study, The National City Bank monthly publication, that wonderful exposition of the industrial, manufacturing and export review that they get out, or the letter of The First National Bank of Boston or the Babson reports, and the like, the United States Geological Survey, the Railway Age, and the Black Diamond, will get a true idea of what the coal situation, and different industrial and commercial situations are.

Salesman an Economic Engineer

By regular conscientious reading and study of these authoritative publications you improve yourselves and you do advance and in time should qualify as an economic engineer. That is what a salesman ought to be. Just as we have our mechanical engineers, sulphite engineers, etc. Today the crying need is for good, sane, splendid economic engineers and merchandise counsellors, men who can go out and tell these tradesmen authoritatively and decisively what the right thing is to do.

The law of supply and demand today is obtaining more or less. Our prices went up and they went up rapidly, when the Government came in with artificial priorities. Those artificial stoppings are being curtailed. Meanwhile the markets are coming back under the influence of the law of supply and demand. Then another thing you need to realize is that these are days when every industry, like every tub, stands on its own bottom.

There have been severe declines in woolens—I don't see how they could be avoided when England holds a billion pounds of raw wool carried over from the war. That is twice the consumption of the United States in a year. Woolens are naturally going to remain low. What would happen in our industry if we had wood and pulp supply sufficient ahead of us for two years' consumption in America at prewar prices?

In our program this afternoon, I have arranged certain talks. The arrangement was made before Henry jumped off the high building, but if I had known it, I couldn't have arranged it better. The financial situation will be gone over by Mr. Harry Merrick; the labor situation in the United States by John W. O'Leary, the outstanding authority on labor in this section of the country; the transportation situation by Samuel Dunn; and the fuel situation by Mr. L. Romanski. They will tell you of these concrete problems, the coal problem, the financial problem, the labor problem and the transportation problem, andI hope that we will have one of our own industry who will present the question of raw materials.

The Six Fundamentals

There are six fundamentals. If you know the situation surrounding those six fundamentals, brains, finance, labor, transportation, fuel and power, and raw materials, it will be a great help. The brains of the country have been tremendously befuddled. I haven't provided anybody to speak on the brains. Everybody said, "My brain isn't working just right on this problem of brains. I have been consumed with the problem of materials."

I find they have been considerable befuddled. We are going to the bottom and basis, and taking the fundamentals, and we are going out, we hope, in God's good time to a sane economic basis of markets in this country.

Now, there is a great deal of pessimism through the country and the way to meet pessimism is to meet it with optimism. There never was in this country any more optimistic factors than we find right here today.

The Present Prosperity

In the first place, the purchasing power of the American people is unimpaired. It is away above the double of our costs of manufacturing. Let me give you a few instances. We are blessed with the most abundant crops we ever had in America. The crops, it is estimated, will aggregate the tremendous sum of over twenty billions of dollars, enough to wipe out the entire Government debt of all the three years of our war. In one year we are producing that. I was talking to a big paper dealer from Kansas yesterday. I said, "How do you feel in Kansas about Henry Ford's leap off the top of the high building?"

He said, "We are not thinking anything about that. Mr. Gibson, for the first time in a long time, we have this condition: We have a bumper wheat crop and right along with it a bumper corn crop, three billion, one hundred thirty million bushels of corn in this country. The farmers are going to have a splendid crop of both wheat and corn that will bring them a splendid price. They are also splendid spenders, and buyers, and our agricultural prosperity is the foundation of all of our domestic prosperity."

General prosperity today, men, is so great that you can hardly comprehend it should I give you the figures. Look at the railroad lines. They have had splendid business. There is another thing. Can Henry Ford put us down to pre-war transportation cost? The railroads are making good earnings. The railroads today, according to the Railway Age, must buy within the next three years six billion dollars' worth of material. Think of it!

Jim Hill used to say that when the railroads spend a billion dollars a year for equipment, we had good times, irrespective of whether we had good crops or not. Here you have a good crop, you have the railroads on an earning basis where they can spend billions of dollars for new equipment which they sadly need, and on top of that you have a railroad pay roll to employees aggregating three billion six hundred million dollars a year. What on earth do you suppose, men, they are going to do wtih this money? Are they going to hoard it up and keep it? Not on your life. Spending on a large scale is the order of the day. Don't forget that. The President of the Thrift Society of the United States made a statement the other day saying that there were in the pockets of the proletariat of the United States, the common people, three billions of dollars. It isn't in the banks; it is in their pockets, under their beds; under the rugs; in their personal possession. What for? To spend.

These are great additions of wealth accruing to America from our crops, interest earnings and railroads, from other classes of employees. Remember this, that wages are the last things that will decline. The conditions all over this great country of ours are tremendously fine, optimistic, splendid and strong.

Orderly Decline in Prices

I am not quarreling with any man who wants to see lower level of prices. We want to see them in our industry. These high prices are a tremendous liability at a crucial time. We shall have a lower price level in time, the only thing I am pleading for is that it come in an orderly, sober manner. Any man who jumps off the high building of high prices like Henry Ford, shows his profound disregard for the law of economics, and in its last essence it is nothing more or less than commercial bolshevism, a total disregard for anybody else.

I want to ask you to watch the index figures. The number of commercial failures in August, 1920, 235 against 133 in 1919, for the same month, an increase of 62 per cent; liabilities, $14,502,000 against $3,150,000 in 1919, an increase of 360 per cent. The thing for us to do is to help. Every man keep his feet on the ground, keep his pencil sharp, keep his head cool and his feet warm. Go out, I plead with you, study, make use of all these tremendously fine market reviews and sane market advice that is being given out by our captains and leaders of industry.

Now, men, I have gone over my time. The next item of business is the report of our Secretary. I take pleasure in introducing to you our Secretary-treasurer, Dr. Hugh P. Baker.

Secretary's Report

Dr. Hugh P. Baker: It is a great pleasure to be at this meeting and to take part in it. I want to make just one reference to the fine address by the President in his reference to the way in which we have been going up the steps the past five years—I think he used the term "the past five years"—in the manufacture of paper, an idea that seems to me vital in the cost of paper and the future cost of paper.

I am familiar with the raw material situation as far as wood is concerned—and 90 per cent of the paper in this country is made from wood. The price of wood has been increasing right along, not in the past five years, but in the past twenty-five years, and unlike other great industries, the textile, furniture, and even automobiles, we are in the midst of a scarcity of raw materials in our industry, unlike that in other industries, and that is an important factor in trying to analyze the situation, and to know what prices are going to be and how rapidly they are going to decline in our industry.

Just remember, we are in the midst of a serious scarcity of raw material, of wood, not only in this country, but in Canada as well, and it is going to be a long time before we get back to the point where we can take care of our supply of raw materials as the manufacturer of cotton or the manufacturer of wool can take care of his. It is a very important matter, and I have digressed just because of my interest in it.

I think the matter that will interest you most is the financial statement, and it seemed to me that it might be of interest to you to have this in two parts. The first part is the period from the

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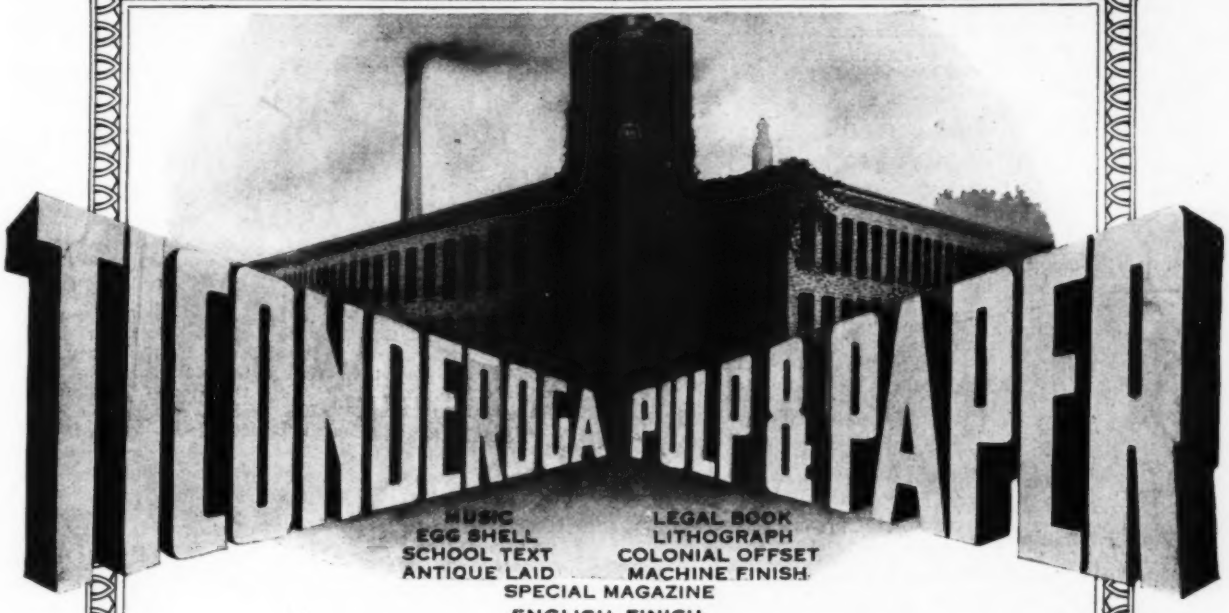

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first organization of the Association, or the first meeting of the Association, down to your completed organization last April, and then from last April to this time.

Dr. Baker read the financial statement.

The President: Gentlemen, what action do you want to take on the two thousand dollars we have on hand? Do you move that the report be received and filed with the Secretary?

It was voted, on motion, duly seconded, that the report of the Secretary, the financial statement, be received.

Dr. Baker: I may say, Mr. Chairman, I have the detailed statement of the expenditures.

The President: I think it would be a good idea to have them printed in the next bulletin.

Dr. Baker: It seems to me, in making a brief report of the Secretary's activities, that it might be of interest, as we have a number of new members, to cover very briefly the historical development of the Association.

Brief History of the Association

"A preliminary meeting for the discussion of the formation of the Salesmen's Division was held in the Director's Room of the American Paper and Pulp Association, 18 East 41st Street, New York City, on September 10, 1919. There were seventeen present at this meeting, and Mr. L. B. Steward read his letter written to Mr. George W. Sisson, Jr., President, in February, 1918, explaining the need of a Salesmen's Association. Mr. Alfred Klas of the Holt Lumber Company, Oconto, Wisconsin, addressed those present on 'Organization of the Salesmen's Division of the Northern Hemlock and Hardwood Manufacturers' Association.'

"Mr. R. S. Litchfield was elected Chairman of the Organization Committee, and a Committee was appointed to assist the Chairman in drafting Articles of Association and by-laws.

"A meeting of the Organization Committee of the Salesmen's Association was held in the offices of the American Paper & Pulp Association on September 18, 1919, at which time proposed Articles of Association were discussed. This Committee met again on October 3, in the Association rooms, and a tentative program was drawn up for the meeting of the Salesmen's Association at the Waldorf-Astoria Hotel November 13. Motion made and carried that the Articles of Association be amended.

"On October 15, this Committee again met, at which time motion was made and carried to engage Mr. Stanley Krebs as a speaker for the morning session of the Salesmen's meeting at the Waldorf-Astoria, November 13. Details of meeting, preparations of program were discussed. The meeting adjourned to October 30, at which time final arrangements were made for the November 13 meeting.

"On Thursday, November 13, 1919, an organization meeting of the Salesmen's Association of the Paper Industry was held at the Waldorf-Astoria Hotel.

"Dr. Stanley L. Krebs addressed those present on 'The Psychology of Salesmanship.' Proposed Articles of Association were read by Mr. L. B. Steward.

"It was voted to organize the Salesmen's Association of the Paper Industry, and that Mr. L. B. Steward act as a permanent chairman until the election of officers at the first annual meeting in April, 1920. It was voted that Mr. Frederick W. Main act as Temporary Secretary.

"It was voted that the Articles of Association be adopted as printed.

"It was voted that the question of permanent dues be left in abeyance until the April meeting. In the meantime, an assessment of $10 be levied on members who join the organization, to provide for the expenses of the Association until the April meeting. That the assessment levied as above be looked upon as an initiation fee and charter membership of those who come in between November 13, 1919, and April 1, 1920. This assessment to die automatically on April 1, 1920.

"The first Annual Meeting of the Salesmen's Association of the Paper Industry was held at the Waldorf-Astoria Hotel, April 14.

"Report of the Temporary Secretary, Mr. F. W. Main, was read and accepted. Following a brief address by Mr. Steward, roll call of charter members was responded to by men present. Mr. George W. Sisson, Jr., President of the American Paper and Pulp Association, addressed the Convention, speaking on the importance of salesmen in the paper industry, and urging the members to put the S. A. P. I. on a high plane. Brief addresses by leading executives of the paper industry followed.

"A Nominating Committee was appointed to bring in a list of officers for the afternoon session. The Nominating Committee reported the following list of officers for 1920:

"President—George K. Gibson, Wausau Sulphate Fibre Co. Vice President—F. W. Main, Worthy Paper Co. Secretary-treasurer—Hugh P. Baker, American Paper and Pulp Association.

"These officers were elected unanimously.

"It was voted that the annual dues be $25.00. Charter members paying $10; this amount to be credited as part of the first year's annual dues.

"It was voted that a prize of $10 be offered for the best suggestion, with design, for a button to identify members of the Association.

"Addresses were given by Mr. Chas. F. Abbott, Director of Publicity and Sales Research of the National Aniline & Chemical Company, and Mr. H. Gardner McKerrow, Advertising Manager of the National Aniline & Chemical Company.

"Mr. George K. Gibson, President of the Association, held a meeting of the Western members on June 29, which resulted in a number of new members coming into the Association."

I had a note as to the increase in membership, but that will be left for the Chairman of the Membership Committee. I have presented a very brief report, more as a historical statement, to say that the work of the Secretary-treasurer is taken care of.

Salesmen Introduce the Industry to the Public

I want to bring to you this reflection as I get it from the executives in the industry, that they are very much interested in the development fo the Salesmen's Association. I have been making a rather brief study of organization in the paper industry, coming in from the outside, and I have looked at it from a little different way than the man from the industry. I have talked the matter over, and the way it has looked to me, as an outsider, is this: That the paper industry of this county is making its first impression on the public through the salesmen. The salesman counts a good deal on the first impression he makes upon a buyer as he walks into his office, and the salesman of the paper industry, through this organization, is shaking hands with the public for the manufacturers of paper, and in doing that, the Salesmen's Association, is in position to do a fine piece of educational work for the paper industry. The public doesn't know enough about the paper industry.

This industry is now one of the great industries of the country, with an annual production valued at over $800,000,000 and the public knows comparatively little about it. I think every one of you will agree if the packers had begun a few years ago a quiet, dignified campaign of education to let the public know about the problems of the packing industry, that probably they wouldn't be spending feverishly a lot of money today, explaining why prices are as they are today.

I think the industry is going to come to the point when the industry is going to see that this is necessary, and I know of no better channel than through the salesmen.

The President: The next item of business on the program will be the report of the Membership Committee, through its Chairman, Mr. Walter E. Perry.

Membership Committee Report

Mr. Perry: I don't know where I stand, in the classification that our President mentioned. I am one of those down-east Yankees and proud of the family name, but I came out here and got some of that Christian spirit.

The number of members up to April was 103; up to September, 153. Percentage of increase between April 15 and September 24, 50 per cent. I have just signed three applications which will make a membership of 156. The Membership Committee has prepared a letter which we are sending out for a survey of the paper industry to find out the number of men who are properly classified in the selling end. We are getting a very good response from that.

I will say that the Membership Committee hasn't been organized. Practically all the work has been done by the individual members. I want you to consider that, so we should have double this quantity by the time of our April meeting.

At the meeting of the Eexecutive Committee, there was considerable discussion as to the way our articles were drawn up and who are eligible to membership in the Association, and at that meeting it was considered that we should have an Association of Salesmen, Sales Managers, Advertising Men, Advertising Managers or anyone directly interested in sales, in a mill making paper and pulp, and to eliminate all converting industries. At the suggestion of the Executive Committee, I was asked to draw up a proposed change in your Articles to be considered at this meeting. This has been sent out according to your by-laws, two weeks in advance, and every member has a copy of it. In order to bring this properly before this meeting, President Gibson, I move that the proposed change be adopted. It is as follows:

"Any salesman, sales manager or advertising manager or other individual directly and actively employed in sales or sales promotion work by the paper and pulp manufacturing industry shall be eligible to make application for membership."

Paragraph three to read, "In case a member leaves the sales department of the paper and pulp manufacturing industry, the membership becomes automatically inoperative."

Gentlemen, this is your Association. It is up to you to have whom you want in it. If we haven't done it the way you would

like to have it, it is up to you to discuss it. Therefore, I move that this be adopted.

Mr. Gordon Blanchard (Holyoke, Mass.): I second that motion, Mr. Gibson.

The President: Now, gentlemen, the proposed change in Article four in the Articles of Association is before you. What is your pleasure about this? It is open for discussion.

Mr. Fred P. Whiteley (Chicago): Mr. President, I would suggest that you read that again.

Mr. Gibson read the proposed change again.

The President: That is to limit the eligible membership of this Association to such men as paper and pulp men, and your Membership Committee has required that a certification be given to us by the employing mill that such and such applicant, whoever he may be, is on the pay roll and draws his compensation in the shape of salary instead of commissions or any other form, that he is an employe of the paper and pulp mill.

Mr. Whiteley: I would like to have that defined. What do you mean by "employed"?

The President: The Membership Committee asked to have certification that this man is on the pay roll of the employing company.

Mr. Whiteley: As I understand it, you limit anybody who is employed by way of commission?

The President: Yes.

Mr. Whiteley: I believe there are a lot of good fellows selling paper today for one mill on commission and draw their pay on commission instead of salary, and I believe they should be eligible to membership of this Association.

Mr. Perry: This was not drawn up by the Membership Committee. The Articles of Association which were adopted said that applications for membership shall be referred by the Committee on Membership to the employing company for certification. The Committee on Membership shall have full power to act.

This was drawn up in the original Articles and does not come into the proposed change today. I just wanted to clear up that thing. That certification proposition is already in the Articles.

Mr. E. H. Burton (Albany, New York): I quite agree with the gentleman who has just spoken. I don't see in what respect it makes any difference how a man's compensation is given him. As a matter of fact, our entire sales force is on a commission basis, and we have had in the Association fifteen men who are eligible. It was not my understanding that the matter of compensation entered in at all into the Articles as first drawn up. As a matter of fact, I was a member of the Committee that originally drafted the resolutions covering the organization.

Dr. Baker: I think the point that we want to keep in mind here is not the matter of the method of employment. I don't believe it is the idea that that makes any material difference. The change, as in the copy sent out to you, the copy which was received by all of you, was the elimination of the salesman of the converter, and that is the thing to be considered. It is not the method of employment. That isn't the matter to be considered, but merely the matter that the salesmen of the converters would be ineligible to the Association.

Mr. Burton: I want to take issue with that, too. We are not only manufacturers, but we are converters, and at one of the organization meetings, I was asked go before the converters of the American Paper and Pulp Association, to make an effort to get as many of the converters' salesmen into the organization as possible.

If I am correctly informed, up to the present time, the only salesmen that I have any recollection of joining, were several salesmen from the Scott Paper Company. This matter, before the resolution was adopted, was discussed and as I recall it, there was considerable discussion as to whether or not they wanted to bring into the Association all salesmen that were selling paper, which would include the salesmen of jobbers throughout the country, and an item was written up so that the jobbers' salesmen would not be eligible.

The converting industry of the country is quite large. They have a fine lot of salesmen, and I should think at this time, after so many have joined, it would be a mistake to say now that they are not eligible.

Mr. Lewis H. Sisson (Cincinnati, Ohio): I believe that we ought to make a change in that part of the Constitution to include mill agents, as well as direct employes of the manufacturers and also salesmen who sell the converted products from a paper mill, such as bags, envelopes and things of that nature.

I believe it is a good idea to have them in and at the same time keep the organization small by eliminating the jobbing salesmen. You couldn't get them in without having a sort of unwieldy mass.

The President: Gentlemen, the motion before the house is on the adoption of the resolution as presented to you. Is there anything further?

Mr. Harry H. Curtiss (Wisconsin Rapids, Wisconsin): It seems to me that it would not be just what we want, to have our customers members of this Association, and those mills who sell to converters would naturally have their own customers in, sitting alongside of them. Perhaps we wouldn't want that, any more than we would want to have our jobbing connections in the Association.

There may be certain individuals, certain manufacturers, who are also converters. They are eligible because they are manufacturers of paper or pulp. The fact that they are also converters doesn't necessarily throw them out, but it is a converter, a man who is entirely a converter. That is the way it impresses me.

Mr. Sission: Don't forget that those converters belong to the American Paper and Pulp Association already.

The President: There is nothing to prevent their having an organization of their own. It would seem to me this is an organization known as the Salesmen's Association of the Paper and Pulp Industry, and was primarily projected to include pulp and paper mills. It is entirely in your hands. It is only a question of whether we want to throw the doors wide open. For instance, there is a concern in this city, in the jobbing and also in the converting industry. I am sure you wouldn't want them in this Association, and yet, if we left it open, as in the original article, they are eligible.

Mr. Sisson: Couldn't you limit that to members of the American Paper and Pulp Association? Now, the converters were taken into our organization, was it last April or the year before? I am thinking particularly of the envelope and also the bag people.

Dr. Baker: The grocery bag people are members. We have three or four organizations of converters who are members.

Mr. Sission: I would be willing to waive that part of it, only I think a man that sells for any particular mill, whether on commission or salary, should be eligible to membership in this Association. It is as much to our interest as to have the salaried man.

Mr. Curtiss: I don't believe that question is before us.

The President: The question is on the adoption of the resolution as presented to you. If you want that changed, the proper procedure would be to draw up a new resolution or amend it.

Mr. R. T. Houk (Dayton, Ohio): Mr. President, the Articles of Association, as drawn with regard to this matter, would not permit the G. H. Mead Company to become a member of the Association. We buy the output of four Canadian mills and we sell that paper at a stipulated profit. We act as agents for a dozen other mills, but we are not manufacturers.

Mr. Curtiss: Isn't it a fact that you take the entire output of those companies?

Mr. R. C. Sharpley (Chicago, Illinois): Yes.

Mr. Houk: Substantially.

Mr. Curtiss: I think that covers it.

Mr. J. C. Reynolds (Chicago, Illinois): As a matter of information, how would that affect the converters who already have joined this Association? It seems to me before passing this, we ought to think of this, because they were invited to join, and we ought to consider how it would affect the converters who are already in.

Mr. Whiteley: Mr. President, I move you the matter be referred back to the Committee on Membership, to report at some future time, and in the meantime any applications be referred to the committee.

Mr. Houk: I second that motion.

The President: The question before the house is on the motion that this whole subject be referred back to the Membership Committee, and in the meantime any application for membership be referred to the Committee on Membership. They are to report back to the Association at some future meeting or during the day, or any time.

Anything further?

Mr. Frank A. Borchers (Chicago, Illinois): I would like to make an amendment to Mr. Whiteley's motion that action be taken today so that this can be cleaned up. There is no use burying this until some future date.

The President: Will you make your motion that the Membership Committee be directed to draw up an amendment to their proposed change and report to this Association at four or five o'clock this afternoon?

Mr. Whiteley: It is a question in my mind, Mr. President, whether a committee on membership can get the sentiment of the Association, and I think they ought to have more time than that.

The President: Isn't the whole question revolving around confining it to the boys on the pay roll of pulp and paper mills? We all feel that we ought to admit those splendid fellows who are representing mills directly and receiving their compensation in commission or salary.

Mr. Whiteley: There is another question. This was originally to be a salesmen's association. Now I understand you are going to take in general managers, presidents of companies and every-

body else. Ought not that question be considered? I don't believe you can do all that during the day and find out whether everybody wants everybody connected with the mills to come into the organization.

The President: I want to say many mills have no salesmen, and mill managers may control the mills and also take care of the sales.

Mr. Whiteley: Then that will be a question for the Committee on Membership to take up.

The President: We can take care of that portion of it with the Committee on Membership. The main question is whether we want to limit this organization to men who are selling the production of the mills, whether they get their compensation in the shape of a commission or salary. Isn't that the question?

If that is the question, it seems to me we can direct our Membership Committee to draw up a resolution.

Mr. Sharpley: Are there any members of this organization who are solely converters?

Mr. Perry: Very few.

The President: On that question, it would seem to me the fair thing—if we pass this resolution to eliminate the converters; and someone asked about the status of the men—to let those men who have already joined the Association remain in as members.

Mr. Perry: Mr. James Thayer, who is the sales manager of the United States Envelope Company, said to me, "What do you want us converters in your organization for?"

Now, it seems to me we don't want any member in here for any ulterior motive. We are going to discuss our own motives and if you have the customer in here, somebody is likely not to speak out his whole mind. The whole question is that there are dandy good fellows selling on commission, and they should be in here, in my estimation, but there are certain men, unclassified under the same conditions, who pick up a lot here and a lot there, and have no real classification. That is why I was instructed to draw up the articles as they are. There are some men that you don't want to come into competition with. That was the instruction from the Executive Committee.

The main thing is to settle whether a mill will certify to the man directly, whether employed on a commission basis or otherwise. I have some good friends on commission, and I brought the question up. I would like to see them in here, but if we open the doors, how far are we going to go? That is the whole question, in my estimation. It is up to you to decide whether we want the converting industry or whether we don't.

The President: The question is on the motion of Mr. Borchers, duly seconded, that the Committee on Membership be instructed to amend its present proposals and present to us at four or five o'clock this afternoon a new resolution which looks to taking in the men who sell on commission. That is the question before the house. Are you ready for the question?

The motion made by Mr. Borchers was carried.

The President: The next item of business is the report of the Committee on Education. Mr. Carl Lincoln, the Chairman of our Committee on Education, has been unavoidably detained and he has asked Mr. Charles Foster to make a short report for him. I will call on Mr. Foster for the report.

Report of Committee on Education

Mr. Charles B. Foster (Holyoke, Mass.): Mr. President and Friends. Mr. Lincoln's message to me to represent him here today came rather unexpectedly. At the meeting in April, it was proposed that we have a bulletin issued to the salesmen monthly and our company was to be responsible for the printing of the first bulletin.

The educational program has such wonderful possibilities, the necessity for an educational program seems to be so imperative, and the fact that out of our total membership at the present time this bunch represents the men who are here, and this bunch represents those who are not (indicating on the registration cards, showing the number representing those present and those absent), and because it is so impossible to get a big meeting of all of our members, some means of getting in touch with them at regular intervals, a bulletin seems to be the best method of reaching all of the men.

The suggestions for what that bulletin shall contain is a matter of such vital importance that the matter needs a good deal of study.

The pulp and paper industry is issuing a monthly bulletin, and as our Association is so closely affiliated with the pulp and paper industry, it has been suggested that we combine the educational bulletin of the Salesmen's Association with the bulletin issued by the pulp and paper industry. That will be something for you to think about and something for you to act on. If that should meet with your approval, there will be a good many changes in this idea. It will be necessary to have someone definitely engaged to look after this work, because the possibilities of education in this line are really very wonderful. That is the suggestion that your Educational Committee presents to you in the way of carrying on the education of our salesmen in our particular industry. You may do with that suggestion as you choose.

Training Salesmen

George Gibson has asked me at this time to say something to you about my ideas of training salesmen. My job with the American Writing Paper Company, as assistant general sales manager, is to work with the men in our branch offices, and in developing salesmen. The first essential, the first thing to be looked for, is character.

The men that are here, as our friend George has mentioned, the faces that I see here will stand out, as he very nicely put it, as a fine-looking bunch of men. The faces of the men in this audience represent character. I think perhaps this audience is a pretty good representation of the men in the paper industry.

As our educational work progresses, I am sure you will all agree with me that we should do everything we can to develop big men in the sales end of our business.

A book that I have read recently by Ed. Clutton Brock, entitled, "The Ultimate Belief," says that every nation and every individual in a nation has and arrives at a living philosophy. We must have some guiding philosophy in our lives and that philosophy which guides us, which helps to form our character, is the thing that influences our lives and makes us what we are.

When we go over the history of different civilizations from ancient Egypt on down through, until we arrive at the present civilization, which was born about two thousand years ago, the main idea was created by the Nazarene. The Christian civilization was formed at that time. It is now recognized as a Christian civilization. The fundamental thing in this civilization that we are living in today is the teaching of the Nazarene. That is the thing that is highest in our best thought, the thing that appeals to us most strongly when we think of the best things of life, and in training salesmen and in educating our salesmen in this industry, the first thing we look for is what his method of living is, what his life is based on, what the fundamental thing in his life is.

Now, Christianity, in spite of all the oppostion it has met with, has permeated through society until today we recognize this civilization as Christian because it works. It reduces friction; it stops war; it does away with noise. It makes things work.

If we could lubricate our salesmen with enough of the spirit of love to eliminate friction, to eliminate noise, to eliminate war, we would have more efficiency, and we would get results. We have got to begin with the basic things.

If I were going to take a bunch of young salesmen and train them in business, I would do with them as I have done with my own four boys. I take them before a mirror every day and make them look into their own faces, look keenly into their own eyes. One boy said, "What is the idea, dad?"

I said, "If there is anything rotten there, you can see it."

God Almighty stamps in the faces of all of us what we are. Suppose you had a group photograph of a hundred or a thousand men taken from the road, and right beside them you had another group of the noblest men. Would you have to have those photographs labeled to know which was which? I don't believe you would.

I think that one of the best guides for young men in character building is found in the words of Polonius, in the play of Hamlet. Many of you remember it. The boy Laertes had had permission from the court to go to France, and the old gentleman called him to him and wanted to give him a little advice before going away from home.

"See thou character. Give thy thoughts no tongue nor any unproportioned thought its action. Be thou familiar, but by no means vulgar. Those friends thou hast, and their adoption tried, gather them to thy soul with hoops of steel, but do not dull thy palm with entertainment of each new-born, unfledged comrade. Beware of entrance to a quarrel, but being in, bear it that the opposed may beware of thee. Lend every man thy ear, but few thy voice. Take each man's censure, but reserve thy judgment. Costly thy habit as purse can buy, but not expressed in fancy, rich, not gaudy, for the apparel oft proclaims the man, and they in France, of the best rank and station are most select and generous, chief in this.

"Neither a borrower nor a lender be, for loan oft loses both itself and friend, and borrowing dulls the edge of husbandry.

"This, above all, to thine own self be true, and it must follow as the night the day, thou canst not then be false to any man.

"Farewell, my blessing sees only this in thee."

The Pursuit of Happiness

I should like to have each salesman remember that. It will help him keep his feet on the ground. A man should be happy in his work. The pursuit of happiness was considered of enough

importance by the founders of our Government to induce the founders of our Government to put a clause about the pursuit of happiness into our Constitution.

How can happiness be found? Happiness can't be found, apparently, by shorter hours of labor, by more money to buy things. We don't find happiness in that way. The very wealthy people would be supremely happy if that were the case, and the man in extreme poverty would be unhappy. Yet we find supreme happiness in men of little wealth.

When we study the question seriously that happiness, that longing for something in the human heart is only gratified, is only satisfied by achievement, accomplishment, by doing something well.

There was a boy in France, a nineteen-year-old boy in the trenches of France, who wrote a letter home. He said: "There is a heaven and a hell to this fight. The hell is the suffering that must come, but there is a satisfaction in doing a hard day's work, and there is a content, too, which comes from keeping a sound body, a clean soul and a cheerful disposition against man and devil."

The trials and the sufferings that boy found also, but he learned the secret of happiness in work, achievement, in doing something well, in a work well done.

On one end of the new station in Washington, our capital, these words are engraved: (It seems to me quite a significant thing when the capital of the United States saw fit to put them on a big new railway station.)

"Let all the ends thou aimst at be: thy country, thy God and truth. Be noble and the noblest that lies in other men, not dead, but sleeping, will rise in majesty to meet thine own."

The President: The suggestions of the Committee on Education will be referred to the officers and Executive Committee for action.

The next item on the program is the report of the Social Committee. I have a letter from the chairman of that committee, Mr. John E. Hussey of Boston. (Read Mr. Hussey's letter.)

We will file Mr. Hussey's letter and his recommendations and it is within my province to appoint the two gentlemen that he nominates, namely, Mr. J. G. Turpen, of Miami Paper Company, and Mr. R. I. A. White, as members of the Committee on Social Arrangements of this organization.

The next item of business, gentlemen, is an interesting one. There has been a demand from all the western members that a certain man of Chicago address us on "Constructive Salesmanship."

I take very great pleasure in introducing to you the Reverend George Craig Stewart, of Chicago.

"Constructive Salesmanship"

Reverend George Craig Stewart, D.D.: Mr. Chairman and Gentlemen of the Association. I have been very much interested in sitting and listening to your discussion, and have been very much interested in the report of your Committee on Education. It is very evident that whatever you decide in regard to the converters, you have them in your organization, because the chairman of your Committee on Education is plainly a converter. I want to say that if there are any extra converters here, we are short on converters.

Now, this very versatile, and amazingly versatile chairman of yours happens to be a vestryman in my church, and he always startles and amazes me. It reminds me of the story of the two children who had two books from which they could read bedtime stories. One book was a very interesting one that told about the capture of wild animals, and all about the circus, and the other was a book of Bible stories. The nurse said, "Which book shall I read from?"

The children said, "Oh, read the Bible stories! They are so wonderful! You never know what God is going to do next!"

That is the way I feel about George Gibson. He is a source of constant wonder to me. This is one of the delightful things he has brought me to.

Dr. Stewart's address followed and will be found on another page of this magazine.

* * *

Mr. E. E. Brugh (Green Bay, Wisconsin): Mr. President, I move that a rising vote of thanks be given Dr. Stewart.

It was voted unanimously, on motion of Mr. J. R. Russell, seconded by Mr. Gordon Blanchard, that Dr. Stewart be made an honorary member of the Association.

Mr. Fearing: I now move that we elect Dr. Stewart chaplain of this organization. (Seconded.)

The President: Gentlemen, you have heard the motion that Dr. Stewart be elected chaplain of this organization.

Mr. Main: Just permit me to say one word. As you know, in the American Paper and Pulp Association they appointed a chaplain, and his annual address at the meeting in New York is always one of the features. I remember at one time he addressed a number of noon-day meetings, and each day more and more men came. I remember the first message he gave. He said: "I come before you as a business man, talking on the business of the church. You ask what is my business? I represent the biggest business on earth. What is it? The church of the Living God. I am not here to talk to you as a preacher. I am here to talk to you as one business man to another."

I am glad to second the nomination of Dr. Stewart.

The President: You have heard the motion. All in favor of electing Dr. Stewart as chaplain of this Association, please signify by rising.

The men arose and applauded.

The President: Now, gentlemen, our hour of adjournment is nearly here. I have one item of business to put through immediately. I would like to have you take action on electing a Vice-President for Chicago. Whom will you nominate?

Mr. Curtiss nominated Mr. Ray Russell for Vice-President, and Mr. Blanchard nominated Joseph L. Fearing.

It was voted, on motion of Mr. Anthony, seconded by Mr. Perry, that the nominations be closed.

It was decided to vote by ballot.

The President: While the Secretary is preparing the ballots, let me read you a couple of telegrams.

"Regret important business prevents my being with you. Best wishes for successful meeting. Personal regards.

"L. B. Stewart."

It was voted, on motion of Mr. Ford, seconded by Mr. Blanchard, that the Secretary be instructed to reply to Mr. Stewart's telegram.

The President: The next thing I have to submit to you is three more applications. We have applications from C. A. Buskirk, John McQuirter, and Carl W. Schneider.

These names given above were voted on separately and elected to membership.

Mr. Fearing received the majority of votes cast in the vote for Vice-President in Chicago, and was declared elected.

The President: Gentlemen, I would like to receive nominations for a Vice-President in the Miami District. We ought to have somebody down in that great big paper district, somebody who can get behind and push. Whom will you have for Vice-President? I wish we could have one nomination and elect him unanimously.

Mr. Houk was nominated by Mr. Perry for Vice-President of Miami Valley. The nomination was seconded by Mr. Borchers, and Mr. Houk was unanimously elected.

The President: If there is nothing further, we will adjourn and go to the Edgewater Beach Hotel for our luncheon and for our afternoon meeting. (Adjournment.)

Trip to Edgewater Beach Hotel

The members and guests were assembled immediately following adjournment and taken by automobiles to the Edgewater Beach Hotel, where a delightful luncheon was served. The menu consisted of a number of delicious courses described in mill terms, and the entire surroundings of this magnificent and spacious hotel lent charm to the afternoon proceedings which took place in one of the adjoining rooms.

WEDNESDAY AFTERNOON

September 29, 1920

The meeting convened at 2:30 p. m., at the Edgewater Beach Hotel, Chicago, President George Gibson presiding.

The President: Gentlemen, we have before us this afternoon the financial situation, the labor situation, the transportation situation and the fuel and power situation. I have the honor of introducing to you this afternoon a man who, I have learned, cut pulp wood in the northern part of this country and in Canada. He knows all about pulp. He is to speak to us on the financial situation in this country.

I have the honor and privilege to introduce to you Mr. Harry E. Merrick, president of the Great Lakes Trust Company, Chicago.

The Financial Situation

The address of Mr. Merrick followed and will be found on another page of this magazine.

* * *

The President: As I said this morning, there are plenty of items of optimism in this situation in the United States, and you have heard what the financial condition is. The next item on our program this afternoon is the labor situation, and I have asked a man to address you that stands, as the Association of Commerce said to me, the one outstanding authority in this section of the country, at least on the labor questions.

I have the honor to introduce to you John W. O'Leary, Vice-President of the Chicago Trust Company.

The Labor Situation

Mr. John W. O'Leary: Mr. Chairman, it is always encouraging to come before a group of real active minds as all salesmen have, and learn as you are introduced the subject on which you are to speak.

Your chairman is a foxy fellow. If he had suggested to me that I was to come out here and talk to you about the labor problem, I wouldn't have been here right now.

I have had much to do with that particular impediment in our progress, more than I have had any desire to have. I long ago came to the conclusion that one of the biggest troubles with the labor situation was that there was too much talk about it, and having come to that conclusion, I stopped talking about it myself, showing that I believed in my own conclusion.

And when I started out here this afternoon I asked our good friend who brought me what I was expected to talk about and he told me something entirely different. I come out here and I find a past master talking to you, and don't know all that he has said, but I am sure that he has covered the field pretty thoroughly that I might be able to express myself on.

You know, Harry, as I heard you talk I thought to myself, I hope he will go before I get up, because—but just take this: I don't know whether you attended the same sessions I did one time, when we had some two thousand business men together, and the speaker came from somewhere in the far wilderness to give up his wisdom. He started out by telling a story of an old darkey down south who had been doing what so many of them like to do—stealing chickens—and he was caught at it. As there had been a good deal of it, the prosecuting attorney made a special effort to convict him. He did convict him and the old darkey went to jail. After he got out of jail, he disappeared.

Some year or two later the prosecuting attorney went to a neighboring city, and while there he heard that this old colored chap was now a preacher of the gospel; that he had a church not very far away in the colored settlement, and the prosecuting attorney decided he would go and hear him.

He sat down in the front row, and the service commenced. When the preacher got up to give his text, he started out in a very pompous way, pronounced the passage from the scripture, something to the effect that blessed is the peacemaker, and then he looked down and saw the prosecuting attorney sitting in front of him.

Then the preacher said: "Brethren and sisters, on second thought I'se gwine to change my text. I takes my text from the thirteenth chapter of Jeremiah: 'If thou hast seen me before, say nothing. I will see thee later.'"

So, Harry, as long as you didn't go, just remember that, will you, and say nothing? I will see you later.

Shall I though, because I am here, and you have expected something on this subject, say just a word or two about the labor situation?

Mr. O'Leary's address will be published in a later issue.

* * *

The President: Gentlemen, the next topic on the program of the fundamentals of manufacture is the fuel and power situation. I know how tremendously important and critical the fuel situation is in this country. I believe all of you do also.

I took the matter up with the Association of Commerce, and with their Chairman of the Fuel Committee, of having address us, a man or the man, who could put before us the fuel situation today in a way that we could all understand, and in a manner that the facts and figures would assist us to go out and put it in turn before the men that we meet.

Mr. Mitchell called me up the other day and said, "I have just the man you want."

I have the pleasure of introducing to you Mr. L. Romanski, President of the Atlas Coal and Coke Company, and Secretary of the Chicago Wholesale Coal Shippers' Association.

The Coal Problem

The address of Mr. Romanski will be found on another page of this magazine.

* * *

The President: The last and final speaker is a man of national authority on that great big tremendous subject of transportation.

It took me an hour to convince him that he ought to talk to us. I made up my mind that I wanted him to talk to us, and I went to his office—I had never met him before—and talked to him, and the longer I talked to him, the more I made up my mind that I was not going to leave without his "Yes." At the end of an hour, I had it.

Gentlemen, I have the pleasure to introduce to you Mr. Samuel O. Dunn, the Editor of Railway Age.

The Transportation Situation

Mr. Dunn's address will be published in a later issue.

* * *

Before adjournment the Committee on Membership submitted the following amended resolution to take the place of paragraphs one and three in Article Four of the Articles of Association:

(1)—"Any salesmen, sales manager, or advertising manager, or other individual directly and actively employed in sales or sales promotion work on salary or commission by the paper and pulp manufacturing industry, shall be eligible to make application for membership.

(3)—"In case a member leaves the sales department of the paper and pulp manufacturing industry, the membership becomes automatically inoperative."

It was duly seconded and unanimously adopted.

This concluded the afternon session, and by the aid of autos, the scene was again shifted to the LaSalle Hotel, where promptly at six o'clock the banquet was spread. The souvenir program was a unique affair consisting of a little book lettered "A to Z" and bound in book style with a paper imitation leather cover. In it were the names of the officers, the committees, program of the evening, menu and a complete alphabetical list of all the members of the Salesmen's Association.

WEDNESDAY EVENING

September 29, 1920

The meeting was called to order at 7:00 P. M., after the banquet in the Hotel LaSalle, President George K. Gibson presiding.

The President: Gentlemen, we are running on schedule. We are right up to the schedule, and it becomes my painful duty now to offer some apologies. You have before you the souvenir programs. These were gotten out under pressure. The printer said he couldn't get them out, but when we said he had to get them out, he rushed them through, and as is always the case, "haste makes waste."

The first apology is to Judge Charles S. Cutting. Kindly turn to your programs and make that change. It should be Charles S. Cutting instead of Charles J. Cutting.

Second: We hoped to put in your hands the program of the night, and the Committee who have handled this whole program and made the arrangements, have also alphabetically listed the membership beginning with A. In looking over this, I notice that we left out one of our good and faithful, hard-working members. Please turn to Page C, and put in Harry H. Curtiss, Wisconsin Rapids, Wisconsin.

I am tremendously, abjectly sorry that these errors occurred, and I publicly apologize. Those are the only errors that I know of so far.

When you get home, you will receive a bulletin of today's doings from the Secretary-treasurer and that will contain the names of the men who were voted in today. Add them to your list, and you will have an up-to-date roster of the entire membership, together with the mills and companies and their addresses.

I have a telegram to read to you:

"Dr. Hugh Baker, Secretary Salesmen's Association of the Paper Industry, Hotel LaSalle:

"Had hoped to be present at today's meeting, but have found it impossible. Have today forwarded applications from W. S. Epley and C. W. Chabot. Additional applications are under way. I hope they will be represented.

"(Signed) N. W. WILSON,
"Vice-President, Hammermill Paper Co."

The President: I wish the Secretary would please make note of the fact that I have neglected to make two appointments that are required at this time, the appointment of Mr. H. H. Reynolds and Albert N. Forsythe on the Committee on Education. They are additional members to the Committee on Education.

I also want to publicly thank two men who have rendered me a whole lot of personal service today, without which service, our program this afternoon wouldn't have gone so smoothly, Mr. Fred Whiteley and Mr. E. Brugh, both of whom stayed downtown, and Mr. Whiteley saw that the first speaker, Mr. Merrick was transported out and got to the meeting on time, and Mr. Brugh stayed around until two thirty and brought out John W. O'Leary. I am grateful to them and thank them for it.

Now, gentlemen, kindly turn to the program. You have heard about "Constructive Salesmanship" in an address this morning. You have heard about the conditions surrounding some of the fundamentals of the business, and it seemed wise to the Committee to supply you with a speaker on "Scientific Salesmanship."

We dug around in Chicago to find where to locate the best speaker and the best authority on "Scientific Salesmanship" and we think we have him. We know he is the biggest and the tallest, and we believe he is the best man to address us on this subject.

Gentlemen, I have the honor and privilege of introducing to you Mr. Harry Newman Tolles, Vice President of the Sheldon School. Mr. Tolles.

Scientific Salesmanship

* * *

Address by Judge Charles S. Cutting

* * *

The address by Mr. Tolles will be published in a later issue as will also the one by Judge Charles S. Cutting which concluded the evening's entertainment. The topic of the Judge's address

was "Maintenance of Law and Order the Prerequisite of Civilization" and was a most fitting close to this perfect day.

* * *

The President: Gentlemen, our evening program is completed.

Mr. Main: Gentlemen, you have heard of the three wise men who came from the East. I rise to say a word about the three wise men who journeyed out here. I say wise men, and I think they will agree with me. We journeyed out here from God's country, the Berkshire hills, where we have pie three times a day.

We have been simply amazed at the completeness of the arrangements, and the snappy carrying out of the program. We have had fear at times of being able to assimilate it. One of Jefferson's maxims is, "We never regret having eaten too little; our fear is that we have eaten too much." I fear that we have eaten too much today, although you didn't give us any pie. However, you have given us such a complete program that I fear we shall not be able to assimilate it all.

I am not going into the details leading up to this address, but he has made us feel the glory of our land. Henry Van Dyke once wrote, after a long absence abroad, diplomatically employed, a poem in which he says:

"Oh, London is a man's town, there's power in the air;
And Paris is a woman's town, with flowers in her hair.
It's sweet to dream in Venice, and great to study Rome,
But when it comes to living, there's no place like home,

I know that Europe's wonderful, yet something seems to lack;
The past is too much withered, and people looking back;
But the glory of the present is to make the future free,
We love our land for what she is and what she is to be.

So it's home again, home again, America for me.
I want a ship that's westward bound, to plough the rolling sea,
To the blessed tune of 'Roam enough' beyond the ocean bars,
Where the air is filled with sunshine and the flag is filled with stars."

Now, I just arose, not to say poetry, but to speak what I know is in the minds of every one here, and I want to ask you to join me in giving thanks to Mr. George Gibson, to Joe Fearing, Chairman of the Committee, Frank Borchers, Ray Russelll, of the Committee on Registration, and also to those fine fellows who worked with them to help make this meeting a success.

Will you rise?

The men all arose and applauded enthusiastically.

The President: Thank you, Mr. Main.

As I said, the hour that I promised to let you go has arrived, and yet, somehow or other, I am mighty reluctant to let you go. However, I am going to keep my promise. I want to say this, boys, to those remaining over, the offices of all the companies represented by the men in this organization will be open to you tomorrow, and although we didn't present you this morning on your assembling, the keys of the city, or the key of the city, we have tried to give you the keys to our hearts, and if that doesn't satisfy you, come around and we will present you the keys to our cellars. (Adjournment.)

Attendance

The following is a list of those who attended:

C. E. Adams, A. P. W. Paper Co., Chicago.
Dr. Hugh P. Baker, Secretary, American Paper & Pulp Association, New York City.
Philip G. Baltz, King Paper Co., Kalamazoo, Mich.
Gordon Blanchard, Chemical Paper Mfg. Co., Holyoke, Mass.
Frank E. Borchers, Menasha Paper Co., Chicago.
H. W. Brightman, Northern Paper Mills, Green Bay, Wis.
E. E. Brugh, Northern Paper Mills, Chicago, Ill.
E. H. Burton, A. P. W. Paper Co., Albany, N. Y.
F. N. Countiss, Martin Cantine Co., New York City.
Harry H. Curtiss, Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis.
A. Scott Dowd, Editor, THE PAPER INDUSTRY, Chicago.
Fred S. Dresskill, Champion Coated Paper Co., Chicago.
D. C. Everest, Marathon Paper Mills, Rothschild, Wis.
George A. Eastwood, Parsons Paper Co., Holyoke, Mass.
Thorne D. Earle, Michigan Paper Co., Plainwell, Mich.
George H. Fay, The G. H. Mead Co., Chicago, Ill.
J. L. Fearing, International Paper Co., Chicago, Ill.
Arthur E. Ford, Chemical Paper Mfg. Co., Springfield, Mass.
Albert N. Forsythe, Howard Paper Co., Chicago.
Charles B. Foster, American Writing Paper Co., Boston, Mass.
J. W. Fitzgerald, Canadian Export Paper Co., Montreal.
G. H. Gerpheide, Bandeen Paper Co., Otsego, Mich.
Geo. K. Gibson, Wausau Sulphate Fibre Co., Chicago.
W. A. Goodwin, International Paper Co., Chicago.
R. T. Houk, G. H. Mead Co., Dayton, Ohio.
Spencer M. Holden, Crocker-McElwain Co., Holyoke, Mass.
C. A. Hubbard, Bryant Paper Co, Kalamazoo, Mich.
R. C. Johnson, International Paper Co., Chicago.
John McWhirter, Bergstrom Paper Co., Neenah, Wis.
Frederick W. Main, Worthy Paper Co., Mittinegue, Mass.
A. M. McCreary, International Paper Co., New York City.
E. J. Markham, A. P. W. Co., Kansas City, Mo.
James B. Nash, Nekoosa-Edwards Paper Co., Port Edwards, Wis.
Walter E. Perry, Crocker-McElwain Co., Holyoke, Mass.
Joe Pirie, Neenah Paper Co., Neenah, Wis.
C. H. Phipps, Watab Paper Co., Sartell, Minn.
John W. Powell, Monarch Paper Co., Kalamazoo, Mich.
J. N. Power, Paper Mill & Wood Pulp News, Chicago.
Howard H. Reynolds, B. D. Rising Paper Co., Housatonic, Mass.
Morton S. Robbins, G. H. Mead Co., Dayton, Ohio.
J. R. Russell, Marathon Paper Mills, Chicago.
P. H. Servaas, Kalamazoo Paper Co., Kalamazoo, Mich.
R. L. Shannon, A. P. W. Paper Co., Detroit, Mich.
R. C. Sharpley, Canadian Export Paper Co., Chicago.
Karl W. Simonton, Lincoln Paper Mills, Elkhart, Ind.
K. W. Schneider, Eddy Paper Co., Three Rivers, Mich.
Lewis H. Sisson, Racquette River Paper Co., Cincinnati, Ohio.
W. T. Standbridge, International Paper Co., Boston.
Dan A. Stock, A. W. P. Co., Chicago.
R. A. Swain, A. W. P. Co., Chicago.
Robert Tilson, A. W. P. Co., Chicago.
H. L. Treadwell, U. S. Paper Maker, Chicago.
Charles K. Wadham, Z. & W. M. Crane, Dalton, Mass.
M. A. Wellington, Fletcher Paper Co., Alpena, Mich.
Fred P. Whiteley, Munising Paper Co., Chicago, Ill.
R. A. Wight, Taylor-Logan Co., Holyoke, Mass.
W. V. Williams, Becket Paper Co., Hamilton, Ohio.
F. D. Wilson, Chicago Coated Board Co., Chicago.
C. L. Winter, Groveton Paper Co., Chicago, Ill.
Wm. A. Woase, Manufacturers Paper Co., Chicago.
Isaac P. Witler, Consolidated W. P. & P. A., Rapids, Wis.

Convention of the Cost Association of the Paper Industry

Held on September 27 and 28, 1920, at the Waldorf-Astoria Hotel, New York City

THE semi-annual meeting of the Cost Association of the Paper Industry was held at the Waldorf-Astoria, New York City, on September 27-28. This was one of the best meetings ever held by this fast growing association, which has taken its proper place as one of the important developments in the industry. The whole paper industry has in the past few years awakened to the necessity of proper cost finding in paper and pulp mills, and this association is doing a tremendous work along this line. The slogan of the meeting, which was emphasized many times, was "Sell the cost idea to the executives of the mills, who have not already been sold."

After the registration, the first meeting opened at 10:30 by an address by President Burchell, which follows:

President Burchell's Address

As you know, the Cost Association is less than two years old, yet it has a great deal worth while to its credit. The best thing is that it has a good wholesome bank balance to its credit. The Cost Association has always lived within its means, and always had a bank balance. It could do a great deal more if it had more money to do with, but our policy has always been to use to best advantage the funds and service at our disposal.

In this connection it must be borne in mind that those who have been most active in the Cost Association work have been directly connected with member concerns who have willingly and gladly paid all the expenses of their own men, and made other contributions for the promotion of the gospel of good cost accounting.

Anyone who attended the meeting of the Cost Section of the American Paper and Pulp Association at Hotel Astor in 1917, only three years ago, will recall the inertia and lack of understanding of everything pertaining to cost accounting, its value and its possibilities. At that meeting Mr. Franklin called for a vote on cost accounting systems in use, and there were only four concerns represented who had cost systems built upon sound and dependable bases. Today it is quite different. The Secretary-treasurer of the Cost Association sent out a questionnaire a short time ago with the following results:

Classified Record of Replies to Questionnaire—June, 1920

Principal Product	Replies Rec'd	Have Cost Systems	No Cost Systems	Cost Systems Tied Into Books	Cost Systems Not Tied Into Books
Writing	29	27	2	16	11
Board	22	20	2	14	6
Tissue	13	9	4	7	2
Wrapping	12	12	..	8	4
News	8	8	..	8	..
Book	7	7	..	5	2
Coated	6	4	2	3	1
Fibre	5	4	1	4	..
Converters	4	3	1	3	..
Bag	4	4	..	3	1
Felt	3	3	..	3	..
Pulp	3	3	..	2	1
Cover	2	2	..	1	1
Wall	2	2	..	1	1
Wax	1	1	..	1	..
Roof	1	1	..	..	1
Parchment	1	1	..	1	..
Foundation Stock	1	1	..	..	1
Total	124	112	12	80	32

The following report on Membership proves that we have secured the one hundred members which was our goal two years ago:

Membership—August 6, 1920

By Location

Canada	3
Connecticut	2
District of Columbia	1
Illinois	2
Indiana	1
Maine	1
Massachusetts	23
Michigan	9
New Hampshire	2
New Jersey	1
New York	23
Ohio	5
Pennsylvania	11
Wisconsin	17
Total	111
Total	101

The above classified report demonstrates that the Association is representative of the Industry, not only of the United States, but Canada as well.

By Class of Memberships Now in Force

Date	Full Members	Half Members	Courtesy Members
March, 1919	21	..	1
April, 1919	8	2	..
May, 1919	7	..	..
June, 1919	8	..	..
July, 1919	12	2	2
August, 1919	9	..	1
September, 1919	2	..	..
October, 1919	1	..	1
November, 1919	7	..	..
December, 1919	5	..	2
January, 1920	2	..	..
February, 1920	2	..	..
March, 1920	2	..	..
April, 1920	1	..	..
May, 1920	1	2	..
June, 1920	2	2	..
July 1920	6	..	..
	96	8	7

Total Membership, 111.

Mills Which Have Discontinued Membership
(Not Included in Above Membership Reports)

Joined March 1919—1
Joined Sept. 1919—1
Joined Nov. 1919—1

A part of the cause of this marked growth of Cost Accounting within the industry is due to the growing necessity and popularity of Cost Accounting in all industries, but so far as I know, no other industry has made any such progress in Cost Accounting at any time. On the other hand, we do know of several industries which are unsuccessful in all attempts to develop Cost Accounting in the industry.

We believe the Cost Association is very fortunate in its plan of organization, built upon co-operation as a basis, and that the Cost Association membership is paper mills rather than Cost Accountants. We believe, also, that the plan of handling the work of the Cost Association by men directly connected with Cost Accounting work within the industry is one of the principal reasons why such good and direct results have rewarded our efforts. Associations of this kind usually go to pieces because someone uses them for personal gain; so far as I know, the Cost Association has been free from any selfish motives except the general good of the industry and that good Cost Accounting is good business.

The co-operative plan of the Cost Association has been worked out, as you know, along several different lines. There are the local Cost Association divisions in the several sections of the country where the paper industry is centered. Some of these "Locals" are extremely active and productive of good work, not only for the mills in the locality, but for the industry as a whole. Probably no one part of our work has been more productive of genuine good for the industry than the several local associations in their individual efforts and general help of the national association.

Work of Co-operative Committee

Another form of co-operative activity has been the Classified Groups. In the beginning we thought this would afford the greatest possibility for developing actual dependable cost accounting systems in mills which had none. So far this particular part of our work has been very disappointing. On our Committee on Co-operation, we have had the pick of cost accountants in each of the Classified Groups, such as Writing, Cover, Tissue, Book, Wrapping, Board, and the like. For two years, these men have individually been ready and willing to co-operate, and definitely and directly assist any organization in his particular group.

The difficulty, I believe, has been with the Classified Groups themselves, because they have not taken active part or made any active response to the cost work as a group. They have preferred to deal with the subject individually, and members of the Committee on Co-operation have been called upon frequently and taken active part in developing cost accounting in several of our paper mills, some who are members and some who are not. Some members of the Committee on Co-operation have traveled over the country, visiting mills, giving suggestions and other help, and in future we expect the Secretary-Treasurer of the Cost Association will be active in visiting paper mills and giving direct assistance on any problems of Cost Accounting.

As a result of work which has been developed in the past two years, the department of Industrial Management at the Graduate School of Business Administration at Harvard will make the paper industry its principal subject for work this year, and will offer to do anything possible, using from one to two hundred students two afternoons a week, each doing this work.

Any paper or pulp manufacturer may take advantage of this service, which is a direct outside development of the Cost Association, either by addressing the Secretary-Treasurer of the Cost Association, or the Professor of Industial Accounting, Graduate School of Business Administration, Harvard University, Cambridge, Mass.

The semi-annual conventions of the Cost Association must have been successful or the attendance would have dropped off instead of increasing. Each convention has been attended by an increased number, many of whom have attended one or more of the previous conventions. These conventions have been instrumental, not only in presenting the Cost Association's work, the value and development of Cost Accounting in the industry, but a great deal more in developing the co-operative spirit between paper mills, the cornerstone upon which the Association was built.

Conferences held by the Committee on Co-operation and the

Executive Committee have been attended more or less by representatives of member mills, and others; at these conferences cost problems have been discussed, and as you know, several concerns who have developed and installed the Cost Accounting during the past year have come to the committees of the Cost Association for suggestions, directions and general information.

At our last convention in Cleveland, you were told how one member mill went about this, and has since developed and installed a cost system. Those interested in Cost Accounting in the industry are always welcome at any of the meetings in New York or elsewhere, and arrangements can be made by appointment for special meetings which will be attended by members of the Executive and Co-operative committees.

As a result of the Connecticut Valley Local's meetings, there has been active work done on uniform weight in Pulp. They made a report of progress at our two last conventions and are still working. This problem is in progress of solution, but it will take time to bring about direct results and uniformity of practice.

Joint Committee to Study Ways and Means of Measuring

One of the most important jobs on our hands at the present time is the study of ways and means of measuring everything that is "furnished" to the beaters, and in any and all conditions in which it is furnished, from dry pulp to "slushed" pulp, from shavings to colors. This report promises to be a most interesting and valuable report of all the different practices, the necessary equipment, labor and cost, and the relative value and cost under different conditions. This report will be valuable to every mill in the industry and will be one of the greatest steps toward accurate and standard costs.

The work will be in charge of a joint committee of the Technical and Cost Associations of the Paper Industry.

Although this movement was started at our Convention here a year ago, the Technical Association did not concur in the plan until at their Saratoga Convention the first week of this month. But both associations have now appointed their joint chairmen and the plan "bids fair" to move with speed and precision from now on. We believe this is only one of several ways in which joint committees can secure better results than independent efforts and we appreciate the splendid spirit in which the Technical Association has joined with us in this particular investigation and report which means so much for better cost acounting.

The "Bulletin" has undertaken to carry the gospel of good Cost Accounting where others were not invited. It has undertaken to slip in through the mail box some of the things we could not "put over" either by personal tactics, telephone or otherwise. The "Bulletin" is at your service, and we issue it when we think there is enough good material and news to justify the effort and expense. One of the things we expect to do with the "Bulletin" this year is to devote issues of it to special subjects and special problems; for example, one number may deal with problems pertaining to Stores, another, pertaining to Executives' Reports, and so on. We shall continue to call upon you to tell us how we can serve you best, by conventions, conferences, direct personal service, graduate student service, individual and independent problems, the Bulletin. The Cost Association is yours, and it is yours to use in any way which will promote better Cost Accounting for you and the Industry.

In retiring as your president, I take this opportunity of thanking the members, officers and committees for the splendid cooperation and help they have given me; but mostly for the excellent work each has done for the good of the Association and the Industry.

Other Addresses

The next address was by J. R. Young, of the Merchants' Association of New York, who welcomed the delegates and congratulated them on the very high purposes and ideals that caused them to gather together.

L. A. Clapp, of the firm of Thompson and Black, financial accountants and engineers of New York City, told of the cost ideas in connection with their line of business, and talked on the subject of "Production Manager's Need of Cost Accounting."

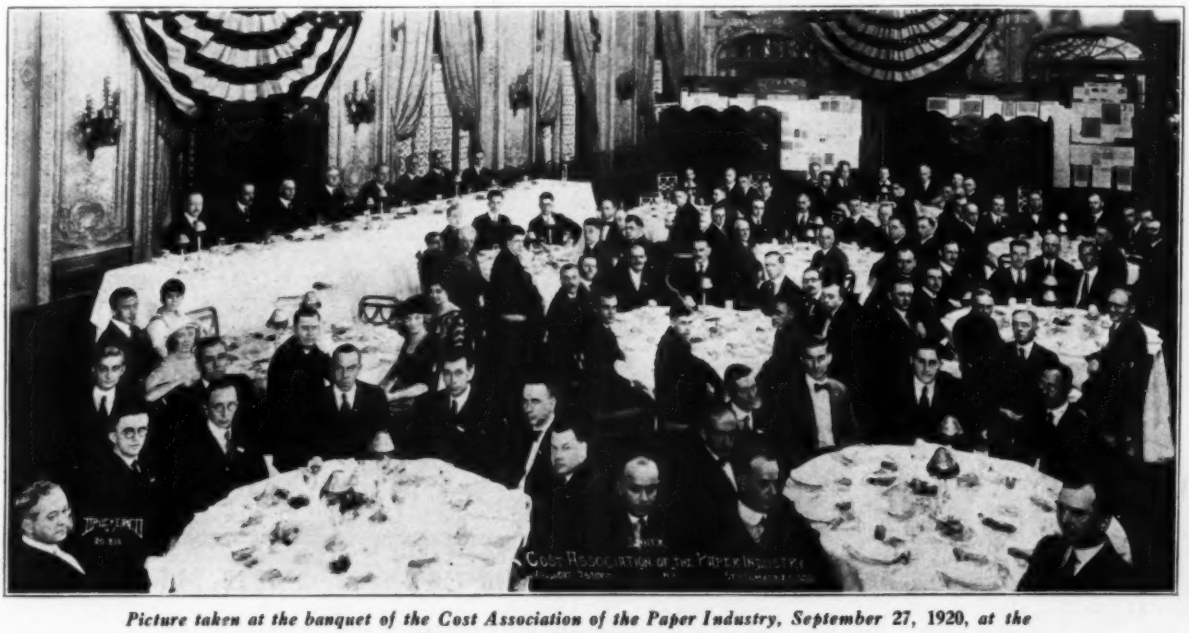
John Clyde Oswald, publisher of the American Printer, and head of the committee on education of the United Typothetae of America, told of the history of cost finding as used in the printing trades.

After luncheon the second session was held at 2 p. m., and was addressed by Col. B. A. Franklin, vice-president of the Strathmore Paper Co., the father of the association, on "Cost System and Executives," which was followed by an address by Henry D. Schmidt, vice-president of Schmidt & Ault Paper Co., on "Cost Accounting from an Executive's Standpoint."

The next address was by B. E. Hutchinson, treasurer of the American Writing Paper Company, on "Practical Application of Cost Work to Management."

Banquet

At 7:00 p. m. on that day a banquet was served to the members, which was attended by several ladies, the first time that any of these dinners had ever been graced by the ladies. President Burchell's wife and friend, Miss Miller, and Mrs. E. B. Fritz and daughter Virginia were present. President Burchell in his talk expressed his gratitude that the ladies were there, and said that at different times many of the members had expressed a desire to bring their wives to these meetings, but heretofore none had ever attended, and he hoped that the presence of these several ladies would be an inducement for the members hereafter to bring the ladies with them. After the sumptuous repast was over Pendleton Beekly, of the Bankers' Trust Company of New York City, delivered an address, which



Picture taken at the banquet of the Cost Association of the Paper Industry, September 27, 1920, at the Waldorf-Astoria Hotel, New York City

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was followed by J. P. Jordan, of C. E. Knoppel & Co, industrial engineers of New York City.

Second Day's Sessions

On Tuesday morning, the 28th, the first session was held at 10:00 o'clock, and the first address was by John B. Hippel, who delivered an illustrated lecture on "Development of the System of Dill & Collins," followed by an address by G. A. Ware, of the News Print Service Bureau, on "Value of Cost Finding in Volume Production."

At 11:00 a. m. a round-table discussion on the following systems occupied the time:

American Writing Paper Co., Chemical Paper Manufacturing Co., Eastern Manufacturing Co., and Strathmore Paper Co.

In the afternoon the business composed of the president's report, secretary-treasurer's report, general business and the election of officers, which resulted in the election of S. L. Bush, manager of the Research Department of Chemical Paper Mfg. Co., as president; B. E. Hutchinson, treasurer of the American Writing Paper Company, vice-president; Henry W. Stokes, president of the York Haven Paper Co., second vice-president; Chas. H. Coye, secretary C. H. Dexter & Sons, third vice-president; J. M. Allen was re-elected secretary-treasurer.

The members of the Executive Committee are as follows:

D. E. Burchell, B. E. Hutchinson, B. A. Franklin, S. L. Bush and H. A. Wingate.

The newly elected president, Mr. Bush, was called to the chair and delivered the following address, after which an open form for the discussion of accounting problems in the paper industry took place.

Address of President Bush

I really feel, gentlemen, that the acceptance of this position as president of our Cost Association is a double honor, an honor because of the position it is. Our Association has been launched along somewhat unique lines, and I feel that it really is an honor to be the president of such an Association. It is also an honor to have a position following so worthy a predecessor. We have had very pleasant relations in the carrying on of the work of the Association through our Executive Committee. I feel that a great deal of the success of our Association work so far, has been on account of the animation and the energy and the thoughtfulness of our former president. I think that we all owe him a very great debt of gratitude for what he has done for this Association.

We have heard, since we have gathered together this time in our convention, some very fine things in regard to the connection between the management and the mill, between the management and the customer, through cost work. I feel that the convention has been very much worth while. There has been so much of value that we will all want to look over carefully as it is published in one way or another in the trade magazines and so forth. We have all noticed the remarks, I am sure, of some of the speakers, that a cost system cannot become perfected in a very short time. You will recall the remarks of Mr. Hipwell this morning in this very direction. He said that they had been at their work now for some time, but they have not come to the point where they feel that they are having perfect success. I am sure we will all agree that this is something we must expect from any cost system. There are different stages in the progress of cost work, and those stages we can find anywhere in any concern where a good cost system is put into operation.

I feel that there are the same kind of stages in the development of such an Association as this. We have now been running along for two or three years in our work, and I really believe that we have covered what we might call the first stage of our Association work. We have, in fact, been finding ourselves. Perhaps you will feel that we are still finding ourselves; and I will have to admit that is so. But I believe that we are now at the point where, if our Association work is to continue and to progress, we have got to put our minds upon something broader and deeper than merely finding ourselves. We have our Association. Our Association has its place in the paper industry. We now must get from our Association its true value. We must sell that value to those who are not now among our members.

The Spirit of Helpfulness

Reference has been made already in this convention to the necessity of selling the value of this Association, and I want to further impress it upon you, if I can. And in order to do that most forcibly, if you will pardon a personal reference I want to bring your attention to two letters that I received just recently. One was in connection with paying the dues for a certain concern in the Association. This concern was influenced some months ago to join our Association. Through our Association, I believe, they received the inspiration to go ahead with a real good cost installation. They engaged a firm of cost accountants to install a system. The system has been installed and as near as I can understand it is working in very good shape. But this concern said to our Secretary, when he sent them a bill for their dues, that they really felt that they were in such good shape now with their cost system that they couldn't really gain very much of an advantage through membership in our Cost Association. They felt that they had about all they needed, and they didn't believe that they could get enough benefit from sending their representative to our conventions to pay for them doing it. Consequently they were going to withdraw from the Association.

I received that letter in such a frame of mind that I cared very little whether they remained members or not, of our Association, and consequently I wrote them a letter that was probably more to the point than it was diplomatic. I was very much pleased to get in return, a letter from them saying that they had entirely missed the point. They were going to remain as members of our Association, and would try to have a representative at our next convention. I am sorry that representative is not here, but they are members of the Association.

I had another letter (I am not mentioning any names in either case). This other letter came only a matter of three weeks ago, from one of the concerns with whom we have been associated for some time, and the writer asked me if I really thought this convention was going to be worth his while to attend. He said that the preliminary announcement of the Association meeting didn't look very attractive, that they were getting along so nicely with their cost work that they didn't need very much help, and he didn't really think it was worth spending the money for any of them to attend the convention.

Knowing him very well indeed, I answered his letter entirely to the point without being too careful about the diplomacy. He and another member of their concern are present at this convention, and they said that they must admit they had missed the point.

Now, the idea, gentlemen, is this: This Cost Association, if it is going to amount to what it should, is not an Association for any of you men to join and remain with as members merely for the purpose of getting something out of the Association. If you have that idea, that the only reason you are members of this Association is because you have not good cost records, you will want to get them and think you can get them in a cheap sort of way by belonging to this Association, as your new president I want to tell you that I am sure your Executive Committee would rather have you withdraw. The real reason for joining this Association is that we all believe that working together, co-operatively, we can each and every one obtain benefit, but very much more than that, we can together give to our industry benefit which they have not had before, and which indirectly will return to every one of us one hundred-fold. It is what we can do for each other, not what we can do for ourselves, that counts in this Association work. And as we start off with the new year I want to tell you that every chance I have, that is the point that is going to be driven home. Also, if a manufacturer comes into our Association on that basis, I don't feel that we have the time to waste with him, gentlemen. If someone needs help and we can give them help, let us do it by all means without questioning whether they are members of our Association or not. But membership in this Association should mean a real desire to co-operate and to serve each other.

A Suggestion for Future Meetings

Now, we have had in our past meetings the presentation of a number of cost systems. The presentation of those systems has been quite interesting. We have had them on exhibition, one after another, and you see them all round the room here. We don't want to do anything in arranging for future conventions which will detract from the interest, but your Executive Committee have talked the matter over, and they have felt that these systems had been presented to such a full extent that, should we bring in other systems, it would be only a great repetition of what has gone before. And so, we desire very much to somewhat change the form of our coming conventions. I would like to suggest to you—and this is only a suggestion; we have not talked it over thoroughly among our executive members, but I want to give it to you so that you may think it over, and through the mail we can exchange ideas in connection with it as we build up our program for the year—it seems to me that we have covered very ably during this convention the value of a cost system for the purpose of establishing selling prices, and some of the best methods for doing that. We have dwelt at great length upon the value of cost work correctly applied in the management of a paper mill. Now, the question is, what are we going to do about it? If you who are cost accountants return to your own concerns and say that the convention was fine, go ahead with your work as you have before, and say nothing about some of the things that have been presented to you here, then your managers are not going to get the

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right conception of what they should get from their cost work. If you who are managers and have come here for the purpose of getting some inspiration for your own cost work, go back home without passing to your accountants some of the good you have received here, then you are not going to progress as you might. We have got to go back home, each one of us, and try to actually put into practice the things we have heard in which we can agree.

Now, that being the case, isn't it very logical that all of us during the next few months should very carefully put our minds, in our actual practice work, upon this question of getting the most for the management out of our cost system? If that is so, it seems to me that our local associations in their meetings could very well have programs surrounding this very question. And then our next convention, it seems to me, might surround for a part of the time at least, the presentation of some of the very practical results that different ones have had.

Now, it makes no difference whether you have a very finished final cost system or not. If you have had any thought on cost work at all, you have for your executive some reports, some information which to them is very valuable. You can do your part very finely in furthering this work if you will work together in your local associations, and if you will be willing to take part in another convention and present the fine things that you have from that standpoint. I believe we could build up a fine convention on the basis of what various ones throughout our industry are actually doing on that one point of getting things across to the executive.

Possibilities of a Cost Department

Following that thought out very briefly, it seems to me there is a wonderful field, if we should later attempt to cover it in the same way, in the very vast question of what we can do for and with the superintendent, and the foreman out in the mill, with rightly constructed cost records. And then beyond that, it seems to me that there is as yet a very great and unsounded depth of value in what we may do towards maintaining—I assume you all have accomplished something in that direction—proper relations with your working force, through information comparisons, inspiration that you can pass along to the men in the mill through your cost records.

Now, that places your cost man in exactly the same position as our friend, Mr. Jordan, last night mentioned, as a cost manager. It seems to me there is a program that we can develop with a great deal of value. I throw that out as a suggestion to show you what there is ahead of us in our local associations as possibilities, and what there is ahead of us in our future conventions when we all gather together.

I plead with you, as we leave this convention this afternoon, to go back home, every one of you, an emissary for this Cost Association. Don't depend upon your Executive Committee, your President—pardon me for saying it—who has to earn his salary somewhere, and he is doing it at the mills where he is connected. He can't earn that salary at those mills if he spends all of his own time and energy looking after getting into your Association the right kind of membership and the right kind of inspiration. This is a co-operative affair. Your Executive Committee cannot do it. It is up to every last member. And that is the very positive word I hope you will all take home.

Gentlemen, it is up to us.

Now, in connection with our program this afternoon we are handling somewhat of an innovation, in an open forum discussion. I don't pretend to be able to take my place as being your new President, by answering all of the questions in proper open forum style. I prefer rather, to have this open forum develop into a very vital discussion of some of the things that have been brought up at this convention, of new ideas, new thoughts that you wish to express, or of questions that may happen to be troubling you. Please be very frank. Please do not be bashful; I am afraid some of you are. You have problems. You will come off in a corner here when a few of us gather together, and you will talk about those problems. Please understand that there is so much of value which accrues to every one in the room if you are willing only to discuss those problems in open meeting. Now that is what this open forum is for.

Attendance

Among those present were: B. F. Agan, Walloomsac Paper Co., Walloomsac, N. Y.; A. W. Astley, Chemical Paper Mfg. Co., Holyoke, Mass.; F. R. Andrews, Esleeck Manufacturing Co., Turners Falls, Mass.; A. L. Bull, Fitchburg Paper Co., Fitchburg, Mass.; E. S. Bliss, Worthy Paper Co. Assn., Mittineague, Mass.; D. E. Burchell, Eastern Manufacturing Co., Bangor, Me.; D. W. Bond, Dill & Collins Co., Philadelphia, Pa.; S. L. Bush, Crocker McElwain Co. & Chemical Paper Mfg. Co., Holyoke, Mass.; R. T. Bontillier, Knowlton Bros., Watertown, N. Y.; P. R. Browne, American Writing Paper Co., Holyoke, Mass.; B. H. Briggs, Penn Fibre Board Corp, York, Pa.; F. A. Brown, Hampshire Paper Co., So. Hadley Falls, Mass.; J. E. Barrett, American Writing Paper Co., Holyoke, Mass.; C. H. Coye, C. H. Dexter & Sons, Inc., Windsor Locks, Conn.; C. H. Cashmore, Paterson Parchment Paper Co, Passaic, N. J.; B. H. Cooper, Bemis Bros. Bag Co., Peoria, Ill.; Geo. W. Carr, Hammermill Paper Co., Erie, Pa.; H. L. Cassidy, American Writing Paper Co., Holyoke, Mass.; L. J. Catheron, Eastern Manufacturing Co.; H. C. Cook, Arrowhead Mills, Fulton, N. Y.; L. R. Clapp, Thompson & Black, 14 Wall St., N. Y. City; R. K. Cox, S. George Co., Wellsburg, W. Va.; W. R. Davis, Chester Paper Co., Chester, Pa.; J. D. Davis, Flower City Tissue Mills, Rochester, N. Y.; J. T. Daly, American Writing Paper Co., Holyoke, Mass.; G. W. Dingley, Newton Paper Co., Holyoke, Mass.; R. F. Dutcher, Strathmore Paper Co., Mittineague, Mass.; H. Q. Eldredge, Walloomsac Paper Co., Walloomsac, N. Y.; B. T. Eichelberger, Dill & Collins Co., Philadelphia, Pa.; Wm. L. Fink, The Barrett Co., 17 Battery Pl., N. Y. City; E. B. Fritz, The Paper Industry, Chicago, Ill.; A. L. Fluno, Interlake Pulp & Paper Co., Appleton, Wis.; G. K. Ferguson, Watervliet Paper Co., Watervliet, Mich.; E. J. Fitzgerald, Scott Paper Co., Chester, Pa.; F. W. Fraser, The Ironsides Board Corp., Norwich, Conn.; B. A. Franklin, Strathmore Paper Co., Mittineague, Mass.; C. H. Gardner, Taylor Logan Co., Holyoke, Mass.; J. Platt Glezen, Monarch Paper Co., Kalamazoo, Mich.; C. W. Gould, Jr., L. L. Brown Paper Co., Adams, Mass.; John E. Hyde, S. D. Warren Company, Cumberland Mills, Me.; Morton W. Hopkins, Dill & Collins Co., Philadelphia, Pa.; Wm. W. Howe, Z. & W. M. Crane, Dalton, Mass.; J. J. Hain, Chemical Paper Mfg. Co., Holyoke, Mass.; B. L. Hutchinson, American Writing Paper Co., Holyoke, Mass.; S. A. Hummer, York Haven Paper Co., York Haven, Pa.; J. B. Hipwell, Dill & Collins Co., Philadelphia, Pa.; E. A. Jones, American Writing Paper Co., Holyoke, Mass.; Geo. T. Jubb, Kalamazoo Paper Co., Kalamazoo, Mich.; Howard E. Jackson, 25 Elm St., Gloucester, Mass.; R. E. Kimball, Eaton, Crane & Pike Co., Pittsfield, Mass.; T. J. Keenan, T. A. P. P. I., 542 Fifth Ave., N. Y. City; J. H. Kline, York Haven Paper Co., York Haven, Pa.; Jos. E. Kunle, United States Env. Co., Springfield, Mass.; J. H. Karges, C. H. Dexter & Sons, Windsor Locks, Conn.; J. S. Leonhard, Paterson Parchment Paper Co., Passaic, N. J.; E. R. Leonhard, Paterson Parchment Paper Co., Passaic, N. J.; Wm. C. Ludwig, Mead Pulp & Paper Co., Chillicothe, Ohio; M. D. Lupton, The Beveredge Paper Co., Indianapolis, Ind.; Alvan C. Looke, American W. Pa. Co., Holyoke, Mass.; H. Lufft, Hamersly Manufacturing Co., Garfield, N. J.; W. R. Lusignea, Samuel Jones & Co., Newark, N. J.; H. F. Mahaley, P. H. Glatfelter Co., Spring Grove, Pa.; J. E. Marshall, Baeder Adamson Co., Philadelphia, Pa.; P. L. Broesamle, Monarch Paper Co., Kalamazoo, Mich.; Chas. H. Martin, Kalamazoo Veg. Parchment Co., Kalamazoo, Mich.; C. L. M'Calla, The Jessup & Moore Paper Co., Philadelphia, Pa.; L. B. McDermott, Munising Paper Co., Munising, Mich.; J. C. McCormick, Knowlton Bros., Watertown, N. Y.; Henry F. Miller, American Writing Paper Co., Holyoke, Mass.; G. Stanley Morse, Valley Paper Co., Holyoke, Mass.; R. H. Morrill, Crocker-McElwain Co., Holyoke, Mass.; R. M. Mudgett, Strathmore Paper Co., Mittineague, Mass.; E. G. Moseley, American Writing Paper Co., Holyoke, Mass.; J. F. Miller, Bridgeport, Conn.; C. F. Moriarty, Nashua Gummed & Coated Paper Co., Nashua, N. H.; M. E. Marcuse, Bedford P. & P. Co., Richmond, Va.; C. J. Neumeister, Z. & W. M. Crane, Dalton, Mass.; M. O. McNeil, Bedford P. & P. Co., Big Island, Va.; L. E. Oliver, Tolland Leather Bd. Co., Hop River, Conn.; H. L. Price, W. C. Hamilton & Sons, Wm. Penn P. O., Montgomery Co., Pa.; W. J. Parks, Interlake Tissue Mills Co., Merritton, Ontario, Canada; Frank M. Preston, Robert Gair Co., Brooklyn, N. Y.; T. W. Powell, Paper Trade Journal, New York City; M. F. Peterson, United States Envelope Co., Springfield, Mass.; H. M. Ritchie, B. D. Rising Paper Co., Housatonic, Mass.; S. R. Royce, Arrowhead Mills, Inc., Fulton, N. Y.; James A. Reilly, American Writing Paper Co., Holyoke, Mass.; M. H. Roth, Schmidt & Ault Paper Co., York, Pa.; F. B. Snyder, W. C. Hamilton & Sons, Wm. Penn P. O., Montgomery County, Pa.; Henry D. Schmidt, Schmidt & Ault Paper Co., York, Pa.; D. C. Shaw, Jr., Tarentum Paper Mills, Pittsburgh, Pa.; J. W. Scoville, American Writing Paper Co., Holyoke, Mass.; J. B. Shepherd, Peninsular Paper Co., Ypsilanti, Mich.; C. W. Stevens, Stevens & Thompson, North Hoosick, N. Y.; B. E. Sugden, Stevens & Thompson, North Hoosick, N. Y.; H. R. Serf, Schmidt & Ault Paper Co., York, Pa.; A. S. Thompson, Taylor-Logan Co., Holyoke, Mass.; Harry B. Whitney, Fitchburg Paper Co., Fitchburg, Mass.; G. A. Ware, Newsprint Service Bureau, New York City; W. A. Whitney, Edwin Crabtree & Sons, Wendell, N. H.; C. Oliver Wellington, Seovell Wellington & Co., Boston, Mass.; E. M. Walker, American Writing Paper Co., Holyoke, Mass.; H. A. Wingate, C. H. Dexter & Sons, Windsor Locks, Conn.; F. H. Webster, Carew Mfg. Co., South Hadley Falls, Mass.; George Webster, Whitmore Mfg. Co., Holyoke, Mass.; R. E. Winfree, Bedford P. & P. Co., Richmond, Va.; J Wohnsiedler, Union Bag & Paper Corp., New York City; O. V. Yates, Eaton Dikeman Co., Lee, Mass.

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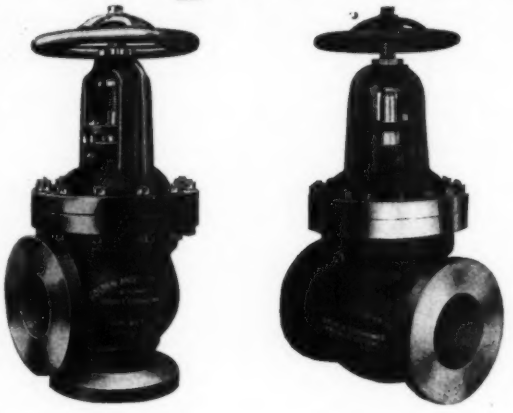

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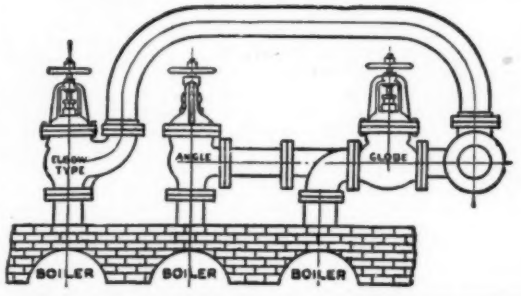

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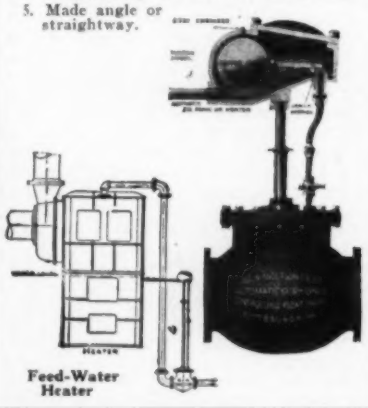

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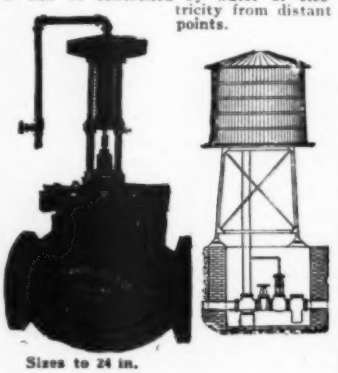

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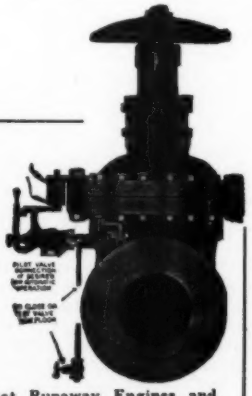

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Ninth Annual Safety Congress

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In every way, it was generally agreed, this was the greatest safety congress in the history of the safety movement—in the numbers who attended and the diversity of interests they represented, in the spirit of humanization which prevailed through all the sections of the convention, in enthusiasm, and in actual accomplishments for the cause of safety during the five days' sessions.

From the opening session until the close of the week one big fact was constantly impressing itself upon the minds of the men who fathered the movement in Milwaukee eight years ago, and who have attended each of the Annual Congresses since then, and that was—to quote C. W. Price, General Manager of the Council—"The conviction on the part of delegates that safety, as a permanent national movement, had arrived; that from now on the work of the National Safety Council will assume such proportions that no longer will it be a question of how to open the doors, but rather that of deciding which of the many open doors to enter."

Nor was this conviction confined to the delegates. The press, the schools, associations of commerce, and municipal governments also have come to this realization, for at this Congress, as at no other, were the staff correspondents of newspapers and magazines, educators of all types, municipal officials, and chamber of commerce and other trade association representatives, evident.

Large Attendance

More than 3,100 persons were registered, which means that at least that number attended the regular sessions of the Congress. In addition to these delegates from the industries and municipalities throughout the country, 1,400 boys—each picked as the representative of his room in the Milwaukee schools—attended a special meeting where, with Milton C. Potter, Superintendent of the Milwaukee Public Schools in the chair, they heard from the lips of such men as R. C. Richards, retiring president of the National Safety Council, C. W. Price, and others, just what the safety problem is, and just what they can do toward solving it. Twelve hundred principals and school teachers representing practically every public, parochial and private school in Milwaukee attended a similar meeting. And on the closing afternoon of the Congress 1,500 Boy Scouts, hundreds of them coming from other states, participated in a demonstration in the arena of the Auditorium. Add to these figures the thousands of persons who visited the exhibit of safety devices and you will agree with Mr. Price who said, "My most conservative estimate is that at least 10,000 persons visited the Milwaukee Auditorium while the sessions of the Ninth Annual Congress were in progress, and that from five to six thousand persons were in the building each day of the week."

So much for general attendance. Everywhere—at the sectional meetings, the general meetings, the lobby discussions, and even at small dinner table talks—there was the feeling that to make industry safe we must go out of the shop and reach the workmen in their homes, not only with the lesson of safety, but that of good health as well. The growing appreciation of this fact was manifested before the Congress when the chairmen of the various industrial sections of the Council included in their programs each at least one speaker on public safety or school safety.

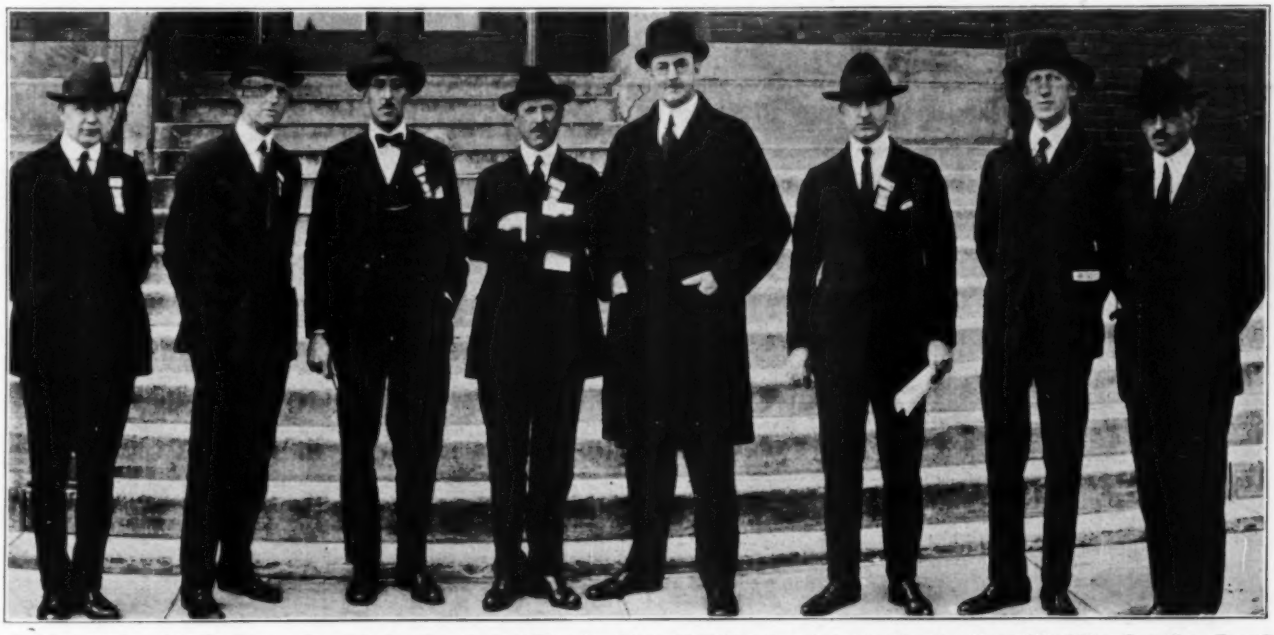
Paper and Pulp Section

A large number attended the Paper and Pulp Section meetings which were held on September 29 and 30. Robert M. Altman of the Marathon Paper Mills Company, Rothschild, Wis., presided. Mr. Altman acted as chairman of this section during 1919 and 1920 and as such was a member of the Council's Executive Committee. The morning of the first day's session was taken up with the usual business of the meeting. In the afternoon a group of addresses were made by speakers drawn from the Kimberly-Clark Company's mills at Neenah, Wis., and explained "The Safety Game as Played in One Plant."

"The Employment Secretary" was the subject of an interesting address by Miss Mary Baker, who said in part:

The Employment Secretary

"If one watches an applicant enter a room, sit down, stand up, sign his name and answer questions there is a fair opportunity to



Left to Right—The Treasurer, General Manager, Second Vice-President, First Vice-President, the New President, Third Vice-President, Fourth Vice-President, Secretary and Chief Engineer

detect mutilated hands and limbs, poor vision, poor hearing, slow comprehension and lack of muscular control or poor muscular co-ordination. These all spell "hazard," "risk"; they determine what jobs a man can or cannot do. A man with poor vision can't work on a paper machine but can be a very efficient watchman. A deaf man cannot be a trucker but he can unload coal. A man with only one hand has been with us for four years. He is a master hand at feeding the chipper.

"Men are seldom, if ever, assigned to a job without being first given a trip through the mill. There are several reasons for this procedure, but I will only mention the safety first ones. All feeling of self consciousness evaporates. The man ambles along and falls into his habitual manners, if he is a grouch, fussy, heedless, suspicious or uninterested you will probably see many evidences of the fact. Men often change their minds as to what they want to do and will say, 'Can't do heavy lifting, am ruptured'; 'Can't work here, the light affects my eyes'; 'Too wet here, I'm subject to sore throat.' And you often change your mind as to what you would let them do, so misfits are saved, and misfits are breeders of accidents.

"Men with defective dispositions and minds are hardest to place. In those cases one must know the foreman—who has patience, who is good natured, who can handle frisky boys, who has the most careful follow-up, etc.

"The nature of the risk must be communicated to the department to which the man is sent. 'I am sending you a crabby fellow, he seems physically O. K. and has a good work record. Can you place him on a one-man job?'

"As a department we place as much emphasis upon the building up of employees as we do on the original selection. One of our biggest functions is to see that men are happy in their work. We listen with sympathy to all their troubles and desires, half of those blow away with little explanation. Sometimes it requires a shift of partners or a shift of jobs, or a tip to the foreman that Tom or Bill is blue and a little personal attention will tide him over the discouraged spell. Keep your old friends on the job, and you will largely reduce the accident hazard. Last year we reduced our labor exit fifty per cent, was it a wonder our accident record fell fifty per cent? Just half as many new men to break in and just twice as much time in which to train new men.

"We invite safety criticisms from our guests, from men who quit and from men on the job. We consider ourselves safety inspectors every time we go through the mill. We report all noticed hazards to foremen or to the safety engineer. We are on the lookout for safety first slogans, cartoons and data for our daily bulletin at the entrance of the plant.

"It is our aim to keep a full working crew, because overtime, double shifts and many absentees all result in over fatigue. Over fatigue means a dulling of the senses, and the senses are the personal safety guards of the workmen."

"The Man on the Job" was the subject of the talk by Mike Corcoran of that company, who said in part as follows:

The Man on the Job

"My father always told me to steer clear of paper mills and that a man had a small chance of his life, as everything was so dangerous.

"Well, I thought I would take a chance, and as I walked boldly up to the main entrance a sign stared me in the face which read, 'If you are a safe man we want you; if not, keep on traveling.' I walked into the employment department and it seemed rather strange to me that the employment agent spent so much time finding out my safety standing and didn't seem very anxious to see if I was worth one dollar a week as a workman. After his talk about keeping safe, I thought my dad must have been right or this man wouldn't have spent so much time on me.

"But when I entered the mill, it was a different story, and the mill was far from being dangerous, but it was yet far from being safe, and I could then see his point of view. In putting the fear of the Lord in each man that came in, he was putting a new safety director on the job.

"Well, I kept my eyes open and whenever I saw a man doing something that was unsafe, I would tell him about it; in turn he would do the same for me. And when one tries to find the other's faults, it is a whole lot easier than finding your own. When I would see an unsafe place around machinery I would report it to the man in charge, and if he would tell me that no one was ever hurt there before I would ask him if that would stop anyone from getting hurt.

"As I was passing the calender stacks one day a piece of rope which the men use to hold the roll from shifting on the shaft became loose and about two feet of it was flapping around at a great rate of speed. I called the man's attention to it and instead of stopping the machine he tried to get the rope to catch a piece of paper tape which he held in his hand and when I showed him how easy it would be for the rope to catch his hand and pull him around the shaft he shut down the machine in a hurry.

"One of our main points in safety is to watch the new man and help him along. He is new on the job and if he thinks someone is with him, it will help him keep safe. Show him his mistakes, don't bawl him out for every little thing, reason with him, and remember that 'many a good horse was spoiled by jerking the bridle'—use him half way decent and he will come more than half way to meet you when you need him."

Henry Bongers spoke on "The Foreman" and said in part:

The Foreman

"The work of my department consists mostly of loading and unloading cars of materials such as pulp, clay, alum, caustic, rosin, paper, lime, brimstone, etc.

"When we unload pulp, I am generally with the men as they open the cars. Many of these cars have strips of wood nailed to the outside of the doors; these must first be removed. Here is where I give them the first instruction. 'Now, boys, don't throw those strips anywhere without first turning over the nails. Some one may fall or step into them.' Next is placing runways into cars. If the plank made for that purpose does not fit, then a sheet-iron plate is used with holes in it through which nails or spikes are driven to prevent it from slipping out of the car as a truck load of pulp is passing over it.

"Then I warn them against the dangers of improper loading of trucks. Generally three tiers of pulp are on a truck. The front tier if not properly loaded, will fall forward and drop off the handle thus causing the handle to strike the trucker in the back of the knees. This is not only painful, but is apt to cause bruises which will result in a few days' lay off.

"Next, the piling of pulp into storage. Too much care cannot be exercised here. I pick out two good careful men and say, 'Here, boys, we want some good piling done, a pile that can't tip over and kill someone; a nice straight pile, leaning in a little. Be sure and bind the corners so as to make a safe pile.'

"Taking down pulp piles is very dangerous. So I warn the boys not to take a high tier straight to the floor. Always work the top off several tiers before attempting to clear out or unpile one tier to the floor.

"Next comes the job of unloading clay. 'Well, what's dangerous about that?' you will say. Well, in the first place the door of the car is narrow and the men are in close quarters. One must arrange to have a right handed and a left handed shoveler together, because if they both shovel the same way they will strike each other with their shovels.

"Our most dangerous work is handling caustic. Very few men know the strength of it. Caustic is poured into the cans in liquid form, boiling hot, and as it cools off it crystallizes and gets very hard. These cans are apt to spring a leak when the liquid is poured into them. I warn the fellows against that innocent looking caustic on the floor that they must step into in order to remove the cans. Should a man have on a poor pair of shoes and was not warned, he would soon have his shoes eaten through and the caustic would reach his feet, burning them so that he may be disabled for a month. We inspect the floors before loading, and, if necessary, furnish rubber boots rather than run any risks.

"Good tools are also necessary for safety.

"The arranging and placing of new men is an important duty. I manage to have a new man work along with an old hand until he gets familiar with the place and his work.

"A foreman can do a whole lot toward safety and happiness by careful watching and cautioning. It does not take long and you will have a whole lot of followers who are only too glad to co-operate and help boost safety first."

M. G. Hoyman, Safety Director of the Kimberly-Clark Company's Mills, spoke on the subject of "The Safety Director," and said in part:

The Safety Director

"A little over a year ago, when I had the good fortune to become connected with the Kimberly-Clark Company as safety director, I brought with me the idea that the foreman is the biggest safety factor in the plant, and that if he were given the responsibility he would make good.

"I immediately put it up to the foremen in about this fashion: If an accident occurs in your department I am coming to you for the explanation; if you do not have accidents in your department you get the credit. I wish to say at this point that the members of our firm and the superintendents of the various departments co-operated most splendidly.

"With the foreman as the safety man, he is on the job twenty-four hours a day, knows the men under him, the work they must do and all the various hazards involved. Consequently, when he understood that the safety of his department was up to him, I got some action. So much for the foreman.

"Relating to guarding, we try to keep our plant so that it will be mechanically safe, following out the rules of the Industrial

Commission as relating to guarding very closely. I do not believe we have had an accident due to lack of mechanical guards in any of our mills in the past year. Any new installation of machinery is guarded and, we believe, well. For example, on a new paper machine in this plant, after it was set up I talked with the superintendent about guarding the pulleys on the main floor. He said he believed the best guard was a solid sheet iron guard completely enclosing the pulleys. The same being installed, certainly makes a fine looking job and absolutely fool proof.

"I am now going to outline some of the more pronounced methods used to keep safety constantly before our men. First comes the Safety Bulletin Boards. In the Kimberly mill we have twenty-two, all painted a dark green with Safety Bulletins stenciled in white as a heading. These boards are painted often so as to keep them clean, and are placed in the most prominent places in each department, where they will not interfere with the labor performed there and yet be readily accessible, both for reading the bulletins placed thereon and the replacing with fresh ones.

"We have a plant publication called 'Co-operation,' issued once a month, and a good one, we all believe. Always one, and usually two pages are devoted to safety. Safety records, history, sayings, jokes, and some good articles written by our men as well as some of the best gleaned from others find their way to these pages and make them well worth reading.

"We have two very able and efficient nurses, one who acts in the capacity of visiting nurse, visiting the sick and injured, and getting them back on the job as soon as they are able. The other tends the office, caring for the injured or sick. There can be no doubt that we are saved many days of lost time through their prompt and careful treatment of the smallest injury. On top of their efficiency they are two of my best safety boosters, taking as much pride in the mill safety record as I do. They keep an accurate record of all accidents, the cause, and kind, so that I have at all times available for my information the trend of things. By that I mean the particular kind of injuries that happen the most frequently, and it is not infrequent that they bring to my attention some safety job that needs doing badly.

"I have not tried to give in detail just what I do every day, but have simply presented a few of my ideas and stunts that have been successful in interesting the men and setting them to think, for when men think, accidents rarely happen. In this Kimberly Mill last year, accidents were reduced 41 per cent and days lost due to same, 47 per cent. The figures for our entire seven mills total 49 per cent reduction in accidents and 51 per cent in days lost."

Second Day Session

The first address of the second day was by R. H. Guerrant, Safety Engineer of the National Safety Council, entitled "Paper Mill Accident Records," which follows:

Paper Mill Accident Records

The officers of your Section, prompted no doubt by an article which appeared in the June issue of the "National Safety News" on the accident records reported from seventeen members of the Paper and Pulp Section, requested me to prepare a paper on the subject for this Congress. I undertake the preparation of such a paper mainly because there is quite a difference in the methods now followed by the members of the Paper and Pulp Section in keeping their accident records, and because it is very apparent that if the various mills will standardize one method it will be a distinct advantage to all.

The general method of collecting the data and keeping the accident records in your industry need differ but little from that used in any other industry. In fact the only difference is in the classification of accidents by causes and departments. While I have had but little experience in the paper and pulp industry and hardly feel competent to recommend a standard classification for paper mill accidents, I nevertheless have had several years' experience in this work in the steel industry, being for six years employed in the accident prevention department of a large steel corporation, four years of which I was assistant manager of the department. In that position I was responsible for the tabulation of from four to six thousand accidents each year and helped standardize the methods now in use by that company. I also had charge of the safety work and accident records for the U. S. Government arsenal at Rock Island, Ill., for about a year during the war, at which plant there were between thirty and fifty accidents per day. My experience then has been extensive enough to indicate that the general principles in all accident record work are the same.

Reason for Keeping Accident Records

Why are accident records kept?

You no doubt have been in many plants where practically no record has been kept of the accidents to employees. I believe most of you will agree that in times gone by the principal reason for keeping accident records was to disprove and combat any fraudulent claims for damages on account of injuries to employees, and much to the discredit of a few employers, efforts were sometimes made to fight justifiable claims.

More recently, however, and especially since the passage of compensation laws in the various states, the State Industrial Boards have required that records of all accidents be kept and reported. Many companies, even before the passage of compensation laws, kept complete records of accidents because these records helped to determine the causes of accidents in their plants and enabled them to concentrate their efforts toward remedying these conditions responsible for accidents.

Safety work has taught that another very good reason, if not the best reason, for keeping accident records is to impress upon the workmen and management the needless loss of time and money resulting every month from personal injuries. It will be found that the workmen themselves are as much interested in the effect of accidents on their pay envelopes, as is the management in the effect on the cost of production.

Accident records, therefore, should be kept and tabulated so that they may be used for showing the operating executives the need for continued activities toward accident elimination, and also for showing the workmen how much accidents mean to them, as well as for stimulating rivalry between the various departments or mills.

How to Keep Accident Records

Have you a satisfactory method for keeping accident records?

About a year ago I prepared for the National Safety Council a Safe Practices pamphlet on "Accident Records—How to Compile Them and How to Use Them," in which was outlined a uniform method for keeping accident records. That plan, I believe, with possibly a few minor alterations here and there, can be used in any industry. Most of you are no doubt familiar with the plan outlined in that pamphlet; others doubtless have already established a satisfactory system for keeping your accident reports, so that I need not dwell upon this further than simply to point out the five essentials which I consider necessary for any satisfactory method.

(1) See that injured men report promptly.

Workmen should always be educated and encouraged to report at once whenever injured. If encouragement will not do, then they should be compelled by their foreman to report.

(2) Make a record of every man reporting for treatment.

A daily record sheet of all men reporting for treatment is always advisable, even though as in the case of minor injuries, no further record of the accident is made. Such a daily record sheet may be kept in each plant hospital or first-aid station, or if there are two or more of these first-aid stations, one record sheet should be maintained at each station. At the end of the week, or month, these record sheets should be collected and permanently filed. The record sheet used by the American Steel Foundries at each of their plants includes the check number and name of the injured man, the department in which injured, date reported, cause of injury, nature of injury, treatment given, and disposition (whether or not he returned to work or was sent home or to hospital). This sheet is kept as a permanent record and is of value should a workman appear at a later date with an infection and claim it was the result of a former injury. It is a simple matter to refer to the daily record chart and trace all injuries which were reported, as well as the treatment given.

When men are given subsequent treatments, either at a first-aid station, a hospital, or doctor's office, a record should always be kept showing the date, and nature of treatments. A day-book will serve the purpose in first-aid rooms.

(3) Notify the proper departments.

Whenever an injured man who will lose time reports for treatment, the medical department or first-aid station should at once make out a notice of injury slip, one copy of which should be sent to the Safety Department, one to the shop foreman, and one to the Employment Department. This will notify the several departments of the accident so that an investigation may be made, and the employment records properly kept.

(4) Get all information for the accident report.

The accident report for all accidents causing lost time is of much importance and should be made up with particular care. Many companies use the state form for this report. The employment record of all employees should be such that any information relative to the workman's past employment, his age, nationality, date of employment and other such information is available.

(5) Notify departments when man is able to resume work.

Whenever a workman is able to resume work the Medical Department or plant dispensary should make out a "return to work" notice and copies should be sent to the foreman, employment department, and the safety department.

Suggested forms for these several reports are shown in the National Safety Council's Safe Practices pamphlet No. 21.

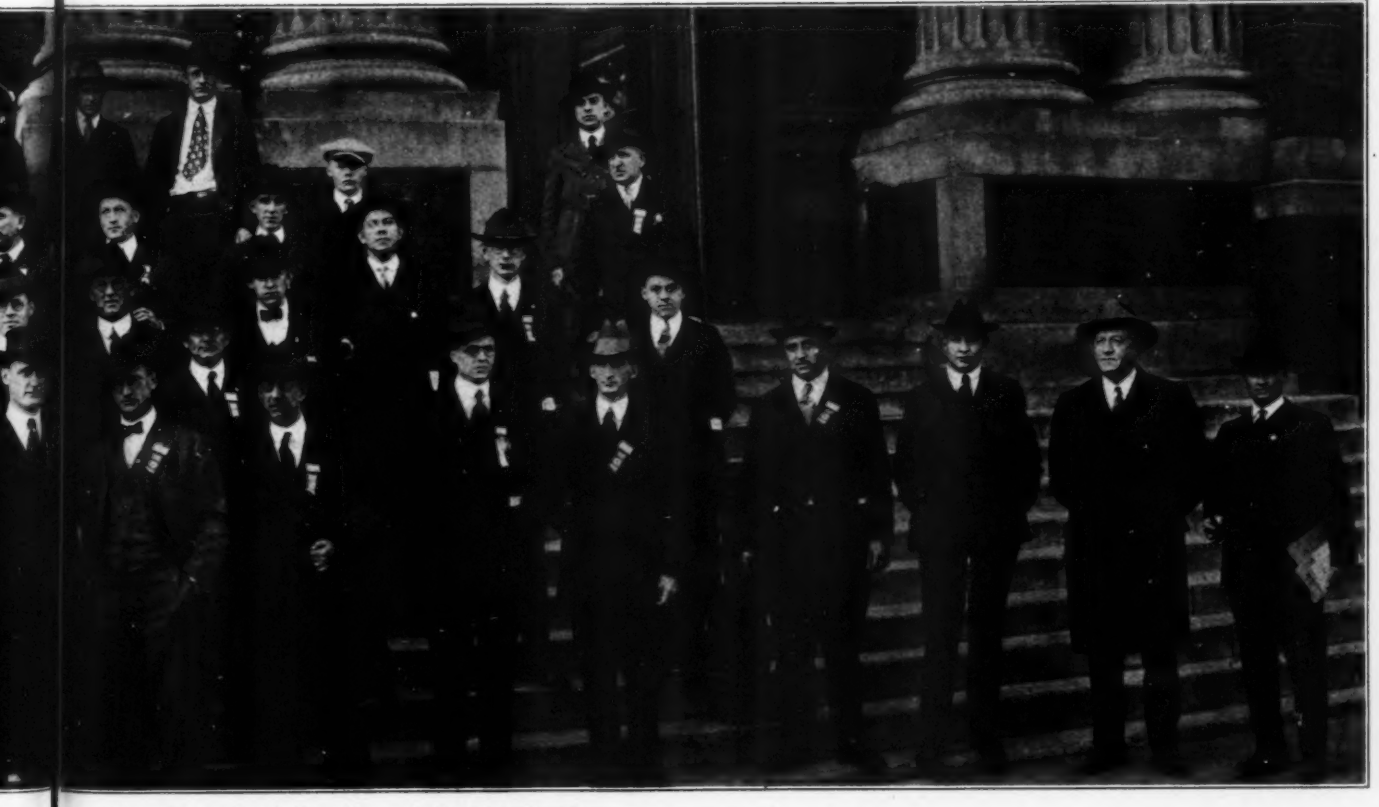
Proper Use of Accident Records

What use should be made of the information on accident reports?

Part of the Crowd at the Opening Session,

The T. N. T. Crowd, Otherwise Known as

Ninth Annual Safety Congress



as the Chemical Section of the N. S. C.

General Electric Compnay
Consolidated Expanded Metal Company
Aetna Life Insurance Company
John A. Roebling's Sons Company
American-LaFrance Fire Engine Company
The Square D Company
Howe Safety Appliance Company
Kremer-Cummins-Machine Company

Accurate experience data is of great value in preventing accidents. Simple, effective charts will show at a glance the progress in safety work, the departments in which accidents occur, their cost as it relates to production, cost, etc. Such charts are useful for securing the co-operation of the executives, foremen and men in safety work.

The forms suggested above if made out and carefully kept will contain all the information necessary for any kind of tabulated charts. Personally I do not believe it necessary or advisable to prepare many charts. Some companies go to the extreme in this particular. I have seen tabulations of plant accidents by age, nationality, color, length of service, hour of day, day of week, month of year, description of injury, etc., many of which were of questionable value. Some of this information of course may be interesting and have some value, such as a chart showing the hour of day at which accidents occur.

I recall that while with the American Steel Foundries I tabulated some five or six thousand "lost time" accidents extending over a period of four years, showing the hour of day, and day of week, on which all accidents occurred. Many other companies have prepared similar charts and they are of some value, such as for determining the effect of fatigue on employees, the value of good lighting, etc. So much data is already available in the National Safety Council's library on many such questions that it seems needless for any company to go to the trouble at this time to prepare many tabulated records. Two or three charts will be found sufficient to answer most purposes. The most important are the classification by accident causes, and the classification by extent of disability.

Accidents Classified by Causes

It is highly important that all lost time accidents be tabulated or classified by causes, for in this way only is it possible to determine what are the real causes of accidents in your plant. The Safe Practices pamphlet No. 21 gives a calssification of accident causes which may be referred to for a general outline. The classification is, of course, not suitable for use in a paper and pulp mill as it stands, nevertheless any classification used should follow that general arrangement. I would suggest to this Section that a committee be appointed to prepare a standard classification of accident causes in the Paper and Pulp Industry which all members and, in fact, all paper and pulp mills should be encouraged to use. There are many advantages to be derived from having such a standard classification. Many of the larger mills already have their own classification list. I have no doubt, however, that any and all companies will be glad to use whatever this Section adopts as standard. In the files of the National Safety Council are the reports of several companies in which classification lists are used—no two, however, are alike. This material is available for the use of your committee.

It is essential also to classify accidents according to the extent of the disability, for from such a table it is possible to determine the relative importance of accidents in various departments, and to know exactly what accidents cost in time and money. The standard method for classifying accidents by extent of disability is shown in table No. 3 Safe Practices pamphlet No. 21.

The frequency with which accidents occur, and their severity, is an exact measure of the accident hazard in any mill or industry. In order to compare the accident hazard of various mills and industries it is highly important that a standard method for computing these rates be used. The U. S. Bureau of Labor Statistics and the Association of Industrial Accident Boards and Commissions have decided upon a standard method for computing the frequency and severity rates of accidents in any and all industries. Formerly these rates were expressed in terms of a unit of measure, the "300 day worker," sometimes called the "full-time worker." Because of the variation in the number of hours worked per day and days worked per year in the various industries and localities it has been decided by the committee to abandon the "three-hundred day worker" as the unit.

The Severity of Accidents

In some plants it has been customary, and is still the practice especially in the mining industry, to express the severity of accidents on the basis of the number of days lost per 100 or 1000 shifts worked. The error which is unavoidable in such a system is that in one locality the shifts may be eight hours each whereas in another locality they may be ten, eleven, or twelve hours each. It is easily seen then that rates computed by this method are not properly comparable. For instance 1000 shifts of eight hours each present but two-thirds the number of hours worked in 1000 shifts of 12 hours each. As long as a man is working in the plant, mine, or mill, he is exposed to injury; the more hours worked, the longer is his exposure to injury. Therefore, the only logical and correct method is to base all accident rates on the actual number of hours exposure.

The adoption of 1000 hours exposure has been decided upon as a proper unit which is convenient in size and remains unaffected by changes in the length of the working day or variations in the working year. This unit of measure (1000 hours exposure) is a stable, scientific, and mathematical unit of measure which is what is needed for the measurement of accident rates. It has the additional advantage that rates measured by any other unit exposure may be readily expressed in terms of 1000 hours unit and vice versa. For instance, all accident rates computed in units of the "300 day worker" may be converted into the rates of the 1000 hour exposure by dividing by three.

In order to determine the frequency and severity rates on the new basis of 1000 hours exposure it is of course essential that the total hours exposure be known. Where the "time" or "payroll" department keeps the total hours worked by each employee it is a comparatively simple matter to get the total hours worked by all men per week or per month. Where these figures are not available the approximate total hours exposure may be determined by taking the average number of hours worked (per week or month) by each employee and multiplying this number by the average number of employees for the period. Where there are two shifts, working a different number of hours, each shift must be figured separately and the total gives the desired time exposure. The frequency rate then is the number of lost time accidents which occur for each one million hours worked, and the severity rate is the number of days lost per 1000 hours worked.

This system of reasoning can be easily demonstrated by the following: Suppose that 150 automobiles pass a given point every two hours; then the frequency rate would be 75 per hour. Now suppose that these automobiles were loaded with five tons each; the severity rate (meaning by severity the weight of the load) would be (5 x 75) 375 tons per hour. In computing accident frequency and severity rates, however, a larger unit of measure is necessary and the unit best suited is 1,000,000 hours for frequency rates, and 1000 hours for severity rates. These different arbitrary units were established because by their use the frequency and severity rates are given in numbers of convenient size, ordinarily ranging from 1 to 100.

It is very essential that all plants should use this standard method for computing their accident frequency and severity rates. These rates represent the true accident hazard of the industry. Whenever used, the accident hazard of one industry is easily and correctly comparable with that of any other industry.

The Time Lost

In computing the days lost on account of temporary disabilities the actual number of days lost during any month should be credited against that month. Where the injured employee does not return to work before the end of the month, all days lost in the following month should be charged to the month in which they are lost. This is advisable because at the time of an accident, it is difficult, if not impossible, to estimate the number of days which will be lost by the injured man. In order to keep a record of the days lost on account of accidents the form shown below is suggested. If at the end of a year it is desired to know the number of days lost on account of accidents occurring in each month, this may be easily determined from the several forms covering that year. This form has been successfully used by the American Steel Foundries for a number of years.

Lost Time Accidents

Month of ..... 19....

Report Number of Accidents of Prior Months	Number of Accidents of This Month	Date Lost Time Began	Date Able to Resume Work	Number of Working Days Lost

Weighting of Permanent Injuries and Fatalities.

One feature of computing accident severity rates sometimes not fully appreciated is that of expressing all fatalities and permanent injuries in terms of "days lost." This is necessary if permanent injuries and fatalities are to be considered as effecting the severity rate of a plant. The severity rate represents the true accident hazard of an industry. That industry having a large number of fatalities and permanent injuries each year is, you will agree, much more hazardous than an industry in which serious accidents are of rare occurrence. There should be some way then to indicate the hazard of the industry by its severity rate. The only logical way is to reduce permanent injuries and deaths to a common basis, in other words to represent the serious injuries by arbitary equivalents in days lost; the same equivalents being used in all industries. The U. S. Bureau of Standards and the Association of Industrial Accident Boards and Commissions has decided upon a standard table of equivalent days lost for all such injuries. (The table can be furnished by the National Safety Council.) The values shown in this table were used in computing the severity rates of the paper and pulp mills shown in the following table.

When given a little thought this method of computing the severity rates is as it should be. When your company makes an inventory of its equivalent and stock, this inventory is expressed on the balance sheet in terms of dollars. It is of course necessary in making the inventory that all separate items be taken into account, but

they are all converted into their dollar equivalents for statistical purposes. In a like manner, while it is necessary that a complete record of all permanent injuries and deaths be kept, for purposes of comparison these must be converted into terms of days lost in order to express the severity rates accurately.

The ratings of 45 mills who submitted their accident reports for the period January to June, 1920, inclusive, were printed in the September 27 issue of the "National Safety News" and are as shown below:

ACCIDENT RECORDS AND PULP MILL MEMBERS, JANUARY TO JUNE, 1920 (INCLUSIVE).

Rating	Company Key Number	Average Number of Employees	Total Hours Worked	Number of Lost Time Accidents	Total Days Lost	Frequency Rate	Severity Rate	Deaths	Permanent Disabilities
1	29	48	Not given	None	None	0	0	0	0
2	44	639	712,485	12	78	16.8	.11	0	0
3	33	264	315,120	7	58	20.	.17	0	0
4	36	150	189,900	4	47	21.	.25	0	0
5	43	150	239,400	7	65	29.2	.27	0	0
6	2	87	133,580	5	37	37.	.277	0	0
7	5	263	326,696	9	97	27.5	.296	0	0
8	6	255	320,388	7	96	22.0	.30	0	0
9	25	609	739,328	27	226	36.6	.31	0	0
10	1	111	134,613	10	49	74.	.364	0	0
11	23	918	1,029,847	47	389	47.0	.38	0	0
12	32	296	324,565	52	126	160.0	.39	0	0
13	26	130	243,620	8	104	32.8	.425	0	0
14	8	1,251	1,253,022	54	656	35.4	.43	0	1 finger
15	18	165	283,048	12	124	42.	.43	0	0
16	34	390	474,240	29	211	61.	.44	0	0
17	38	600	801,454	20	360	25.	.45	0	0
18	27	500	633,333	29	300	46.	.475	0	0
19	7	700	851,200	50	414	58.5	.485	0	0
20	41	1,263	1,836,000	37	957	21.	.52	0	1 finger
21	42	433	563,882	17	292	30.2	.52	0	0
22	19	68	92,835	6	48	65.	.52	0	0
23	22	547	810,295	56	568	69.0	.70	0	0
24	11	224	335,695	19	250	56.5	.74	0	0
25	45	430	555,560	40	415	72.	.745	0	0
26	30	50	76,000	6	59	79.0	.78	0	0
27	40	3,530	4,480,124	236	2,630	52.5	.81	0	2 fingers
28	10	1,265	1,401,384	157	1,315	112.	.94	0	0
29	16	608	656,865	57	6,611	86.5	1.01	1	0
30	13	447	603,772	41	670	68.	1.11	0	1 finger
31	14	290	457,737	19	523	41.5	1.15	0	1 finger
32	37	600	936,000	21	1,102	22.4	1.18	0	3 fingers
33	39	45	56,970	3	72	52.7	1.26	0	0
34	12	330	418,132	25	561	59.8	1.34	0	1 finger
35	4	341	622,000	22	927	35.4	1.49	0	2 fingers
36	35	100	80,000	10	125	125.	1.56	0	0
37	21	1,489	1,983,632	39	6,604	19.6	3.3	1	0
38	31	7,652	9,508,885	409	42,349	43.0	4.4	5	6 fingers 1 arm
39	15	1,193	1,933,758	51	13,747	26.4	7.10	2	1 thumb 1 finger
40	3	612	852,500	68	6,560	79.7	7.70	0	1 dis.
41	9	311	386,262	27	3,938	70.0	10.18	0	1 arm
42	28	425	598,000	37	7,119	62.0	11.9	1	1 thumb
43	20	290	414,668	40	6,286	96.5	15.2	1	0
44	17	258	295,327	30	6,718	115.0	22.6	1	1 finger
45	24	140	223,912	14	6,220	62.5	27.8	1	0
								20	fingers
Total		30,464	39,324,975	1,870	121,066	47.5	3.1	13	2 thumbs 2 arms 1 dis.

Note—The frequency and severity rates are calculated according to the method adopted by the United States Bureau of Labor Statistics and by the International Association of Industrial Accident Boards and Commissions and recommended by the National Safety Council. Deaths and permanent injuries are weighted according to the standard scale adopted by the above organizations.

J. N. Stephenson, Editor "Pulp and Paper Magazine of Canada," spoke on "What Is Being Done in the Pulp and Paper Industry to Bring Education Within the Reach of Every Employee," in part, as follows:

"Several University courses in industrial chemistry include a few lectures on pulp and paper making. The University of Maine is the only American college that has given undergraduate instruction in a regular pulp and paper curriculum, until this fall, when the College of Forestry of the State of New York introduced its first courses on this subject.

"A number of places in Canada and the United States have provided evening classes in elementary science and mathematics for those engaged in pulp and paper mills. Work beyond these elementary subjects has been difficult to provide because of the lack of suitable text books. This lack is being supplied by the generous action of the pulp and paper makers in the United States and Canada in appropriating a fund for the preparation of a set of text books. Work on this large task is now under way. In the meantime, while waiting for the text books to appear, a number of mills are organizing lecture courses on the general principles underlying the different departments, which will be given by men in charge of operations. It is expected that these will be largely in the nature of discussion, or study, groups.

"The organization of classes for pulp and paper makers involves a serious difficulty owing to the fact that most of the men work on three shifts. This could be overcome by having an afternoon class early in the afternoon for those who go to work at 3 or 4 o'clock, and another session in the evening.

"One of the great advantages to be derived from this study of the industry by the men employed in it will be a greater knowledge of machinery and processes and consequently a decrease in accidents due to the lack of this knowledge."

The session closed with an address by H. T. Carruth, General Manager, Mead Paper and Pulp Company, Chillicothe, Ohio, which will be published in a later issue.

Newly Elected Council Officers

The newly elected officers of the National Safety Council are Charles P. Tolman, Chief Engineer of the National Lead Company, president; first vice-president, W. H. Cameron, secretary-treasurer of the Workmen's Compensation Service Bureau, New York City; second vice-president, L. A. DeBlois, manager of Safety Section, E. I. du Pont de Nemours & Co., Wilmington, Del.; third vice-president, W. E. Worth, assistant manager, Industrial Relations Department, International Harvester Company, Chicago, Ill.; fourth vice-president, John A. Oartel, Safety Engineer, Carnegie Steel Company, Pittsburgh, Pa. The following officers of the staff at the National Headquarters in Chicago were re-elected:

C. W. Price, general manager; Sidney J. Williams, secretary; W. H. Frater, treasurer; and R. T. Solensten, assistant secretary.

Exhibitors

Following is a partial list of the exhibitors at the Congress:

Acme Motion Picture Projector Co., 1132 W. Austin Ave., Chicago, Ill.
Advance Car-Mover Co., Appleton, Wis.
Aetna Life Insurance Co., Hartford, Conn.
American-La France Fire Engine Co., 1827 S. Michigan Ave., Chicago, Ill.
American Mason Safety Tread Co., 813 Old South Bldg., Boston, Mass.
American Standard Tourniquet Co., Portland, Maine.
Beacon Safety Device Co., Milwaukee, Wis.
Bradley Mfg. Co., 373 Broadway, Milwaukee, Wis.
Brown Safety Ladder Mfg. Co., 439 S. Clark St., Chicago, Ill.
Central Electric Co., 316 S. Wells St., Chicago, Ill.
Chicago Pulley & Shafting Co., 40 S. Clinton St., Chicago, Ill.
Clipper Belt Lacer Co., Grand Rapids, Mich.
Consolidated Expanded Metal Companies, 560 W. Monroe St., Chicago, Ill.
The Cutler-Hammer Mfg. Co., Milwaukee, Wis.
Efficiency Electric Co., East Palestine, Ohio.
Elliott Service Company, 141 W. 36th St., New York, N. Y.
Employers' Mutual Liability Insurance Co. of Wisconsin, Wausau, Wis.
Firefoam Engineering Co. 111 W. Washington St., Chicago, Ill.
Fire Protection Equipment Co., 538 S. Clark St., Chicago, Ill.
General Electric Co., Schenectady, N. Y.
Alfred C. Goethel Co., 823-31 31st St., Milwaukee, Wis.
Howe Safety Appliance Co., Granite City, Ill.
Industrial Commission of Wisconsin, Madison, Wis.
Ivanhoe-Regent Works of General Electric Co., 5716 Euclid Ave., Cleveland, Ohio.
Jenkins Machine Co., Sheboygan, Wis.
Kremer-Cummins Machine Co.
Lungmotor Company, 711½ Bolyston St., Boston, Mass.
Maryland Casualty Co., Baltimore, Md.
Milwaukee Industrial Dental Clinic, Milwaukee, Wis.
Milwaukee Tank Works, Milwaukee, Wis.
Mine Safety Appliances Co., 906 Chamber of Commerce Bldg., Pittsburgh, Pa.
National Institute for Industrial Education, 512 Fifth Ave., New York, N. Y.
National Safety Council, Historical Exhibit.
National Safety Council, Library Exhibit.
National Safety News.
North Western Expanded Metal Co., 407 S. Dearborn St., Chicago, Ill.
Pawling & Harnishfeger Co., Milwaukee, Wis.
The Prudential Ins. Co. of America, Newark, N. J.
Pyrene Mfg. Co., 327 W. Jackson Blvd., Chicago, Ill.
The Rand Co., 116 S. Dearborn St., Chicago, Ill.
John A. Roebling's Sons Co., 165 W. Lake St., Chicago, Ill.
Safety First Mfg. Co., Alexandria, Va.
Safety First Supply Co., 107 Third Ave., Pittsburgh, Pa.
Safety Truck Brake Co., Appleton, Wis.
Seeley Chemical Co., Eau Claire, Wis.
The Square D Company, Detroit, Mich.
Surty Guard Co., 4137 W. Kinzie St., Chicago, Ill.

ECONOMY *renewable* FUSES

Knife-blade type

Double Protection for Pulp and Paper Mills

Mills, lumber yards and woodworking plants using electrical energy for power and light reduce fire hazards by installing Economy Fuses in all circuits.

The "Und. Lab. Inspected" label on the fuse and the symbol on Economy "Drop Out" Renewal Links mean double protection—factory and laboratory.

Economy Fuses are accurately rated. They give maximum safety and efficiency at minimum cost—cut annual fuse maintenance costs 80% as compared with the use of "one time" fuses.

Fibre cartridge, sturdy end-caps and the winged washers which securely lock the fuses are virtually indestructible.

All that is discarded in a blown Economy Fuse is the inexpensive strip of fused metal, which is replaced in a few moments by a new Economy "Drop Out" Renewal Link.

For sale by all leading electrical jobbers and dealers

Ferrule type

Economy Fuse & Mfg. Co., Chicago, U. S. A.

Economy Fuses are also made in Canada at Montreal

Economy Fuses were the first line using an inexpensive bare link for restoring a blown fuse to its original efficiency to be APPROVED IN ALL CAPACITIES by the Underwriters' Laboratories.

Avoid the Idler Pulley

Copyright, 1920, by W. F. Schaphorst

IN spite of all that has been said against the idler pulley, we still occasionally read letters in which belt men declare the idler pulley is a good thing.

I agree that idler pulleys cannot be avoided altogether, but nevertheless maintain that wherever the idler pulley can be side stepped it certainly should not be used, because it absorbs power and is an additional hardship to the belt.

There is seldom any excuse for using an idler pulley on a horizontal drive, but there is an occasional excuse for using one on a vertical drive, because in a vertical drive it is impossible to run the belt slack.

It has been my experience in connection with drives varying from horizontal to forty-five degrees, that by putting the belt in such condition that it will not slip, by making it nice, soft and pliable, it can be run very slack—so slack that the sides almost do touch, but of course they should not be permitted to come in contact. By cleaning belts properly and giving them sufficient length so that they can run slack, we have a greatly increased arc of contact with least danger of slipping. Besides, there is less tension on the bearings, consequently less power waste due to this tension, and in addition there is a saving of running the extra idler pulley, also, the saving of the cost of the idler pulley itself.

Wherever belts run off of pulleys, it is usually due to improper alignment. By aligning the pulley carefully and by so treating the belt that slippage will be stopped, there will be no running off, and there will be no need for an idler pulley. If the belt is narrow—so narrow that it will slip—an idler pulley will make that matter worse by increasing the tension and causing the belt to stretch and soon break.

By running belts slack, thus decreasing the strain on the belt, the writer has known of instances where belts have done duty for eighteen years and more, and no knife has ever been used on the belt to make it shorter. A belt of this kind does not have to be taken up constantly. The slacker the better, because of the greater arc of contact on both pulleys.

"Steady! Always be careful—keep your head and keep your sound limbs," says the National Safety Council.

The Used Felt Problem

EVERY manager and superintendent of paper mills is well aware of the three principal items of expense in the operation of their plant; namely, labor, fuel and felts.

To economize on fuel, they employ every means at their command to lessen the consumption of fuel and obtain the greatest efficiency from the amount of fuel used.

The labor problem is one that must be met according to local conditions, together with obtaining the greatest efficiency in their particular plant.

To offset the high cost of felts, however, is a problem seemingly beyond their control, as the open market for used felts is at the mercy of conditions confronting the shoddy mills relative to the demand for their products, and thus, the price of used felts drops quite low.

This condition can be overcome to quite an extent, since every mill accumulates felts that are of much greater value than the open market offers for them. Felts of this grade can be converted into finished products; namely, bed blankets and auto robes, for which there is a ready market in their own community at a price bringing much greater returns.

Enlarges Old Mill

The Beaver Brook Paper Mills of Danbury, Conn., manufacturers of wrapping, hardware, textile and tube papers and colored specialties is preparing to erect a large addition to its plant and install additional papermaking machinery and equipment, for the purpose of increasing the capacity of the mills to about five times the present maximum output.

The Beaver Brook Paper Mills is one of the oldest manufacturing concerns in Danbury, having been established about sixty years ago by the McArthur Bros., who conducted it successfully many years. The business changed hands a few years ago, and has since been acquired by James E. Gallagher who as president and treasurer has conducted it with much success. R. B. Livermore, a paper manufacturer of twenty-five years' experience, is associated with him as superintendent of the factory, and is to continue in that capacity.

WILLIAM GANSCHOW COMPANY

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MANUFACTURERS OF

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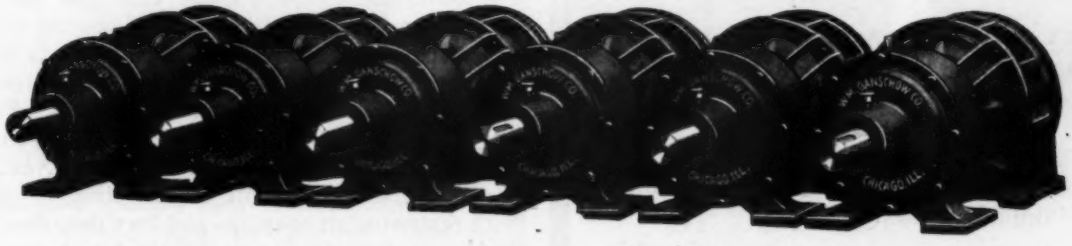

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A Husky Helper

WITH an Auto-Crane on the job you can purchase an ample coal reserve stock when prices are lowest; store it quickly and cheaply in small space; get it from car to stock-pile, and thence to boiler, without waste motion.

Progressive manufacturers are putting their material-handling problems up to the speedy Auto-Crane. It shoulders your lifting, loading and digging. Saves time, money and man-power by keeping all its jobs moving at top speed. Furnished in three types of mounting; three kinds of power.

Thirty-five years of successful hoisting equipment manufacture is built into every Auto-Crane. Interesting booklets on request.

The John F. Byers Machine Co.

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Sales Representatives in 25 Leading Cities

Mishawaka Woolen Mills, Mishawaka, Ind.
Auto-Crane fighting "hot spot" in coal pile

AUTO-CRANE

BECKWITH PATENTS

Can You Afford It?

Soot and ash deposits on the fire surfaces of boilers cause a loss of millions of dollars annually.

Your proportionate share in this loss depends upon the number of boilers you operate, the cost of coal, and the degree of cleanliness obtaining.

Suppose you have four 500 H. P. boilers. Normally these will require 4 tons of coal per hour, or 20,000 tons of coal per year on a 5,000 hr. basis. At present prices, this coal probably will cost you $100,000 per year.

If you customarily allow your boilers to get in the condition shown in the picture before cleaning them, your loss is anywhere from $10,000 to $20,000 or more per year.

If you clean your boilers regularly and conscientiously with the hand lance, your loss is from $4,000 to $8,000 per year, depending upon the skill of the fireman.

If you clean your boilers with Diamond Soot Blowers you incur no loss, but get value received in steam (within the limitations of your furnaces and boilers) for every dollar spent for coal.

Best of all, Diamond Soot Blowers cost but a fraction of the annual saving.

Ask for Bulletin **290.**

DIAMOND POWER SPECIALTY COMPANY
Detroit, Michigan

Diamond

SOOT BLOWERS - SAVE 4 to 8% FUEL

Power Plant Management

(*Continued from page* 993)

furnace. When installed under conditions within its limitations, it is more economical and satisfactory than hand-firing.

The Under-feed Stokers

Among the best known under-feed stokers are the Taylor, Type "E," Jones, Riley, Westinghouse, and American.

The under-feed stoker is the stoker for large installations and exceedingly high ratings. Indeed, so completely has it pre-empted this field that it is unusual to go into a large central station or high-duty large boiler power plant of any sort, built in recent years, and find other types of stokers installed.

There are a number of reasons for this. First of all, the under-feed stoker is adapted to all grades and sizes of free-burning bituminous coal. Next, it is essentially a forced draft stoker, since it operates with restricted air openings and very deep fires. The forcing capacity is almost unlimited, instances being known where this stoker has been driven to over 400 per cent rating.

Sufficient combustion chamber space is the principal consideration in making under-feed stoker installations, as with this stoker it is necessary to elevate the boiler a very considerable distance above the floor. Coking arches or plates are dispensed with entirely. The principle of the under-feed stoker is that of a steam-driven ram, which forces the fresh coal into a large receiving retort, contained within the furnace, and from there up under the fuel bed.

The Jones stoker consists of nothing whatever except this retort or a series of retorts, depending upon the size of the boiler. There are no grate bars, and no ash-pit—just a blazing pile of coal, continually fed with new supplies pushed up from below. Air is admitted through hollow blast tiles at the upper edges of the retort. Ash and clinker form chiefly on the dead plate between the retorts, and are removed by hand at intervals of a few hours. Automatic control of air and fuel supply is secured, definite proportions of each being admitted as the steam pressure tends to rise or fall.

In the Type "E" stoker, the retort has a reciprocating sliding bottom, which carries the coal forward. It is delivered unformly from front to rear, by auxiliary pushers, and as it rises in the retort is distributed to the sides of the furnace by means of rocking-bars, so set as to slope both ways from the center of the furnace toward the side walls. The progress of the burning coal and also of the ash and clinker is constantly toward the sides. By the up and down action of the rocking-bars, the clinker is kept from forming in large pieces. Dump trays at the side permit cleaning by the act of throwing a single lever.

More elaborate than other under-feed stokers, the

We Specialize Repairing

An Old Gauge Made New

SEND US YOUR OLD **GAUGES**

We can make them better than new—prompt delivery guaranteed — uniform quality at a satisfactory cost

We Pay Express Charges Both Ways

The men employed by us are experts in this line. We have the capacity and equipment to handle a large amount of this work. Give us a trial.

Write for particulars of Our New Hydraulic Gauge. Eliminates spring troubles and stops Vibration.

THE MANNING GAUGE CO., Inc.
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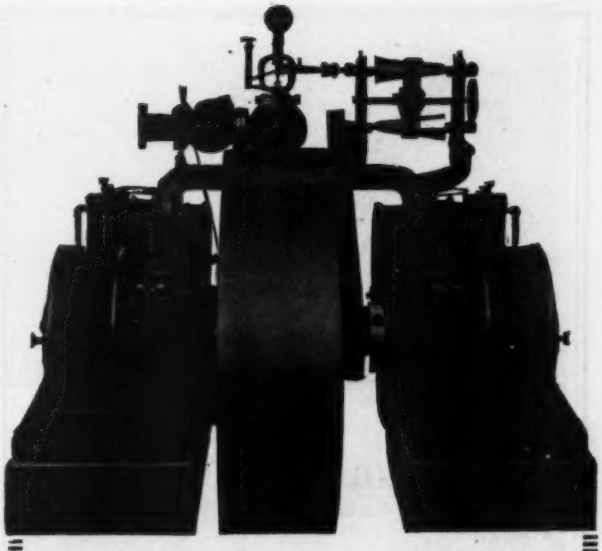
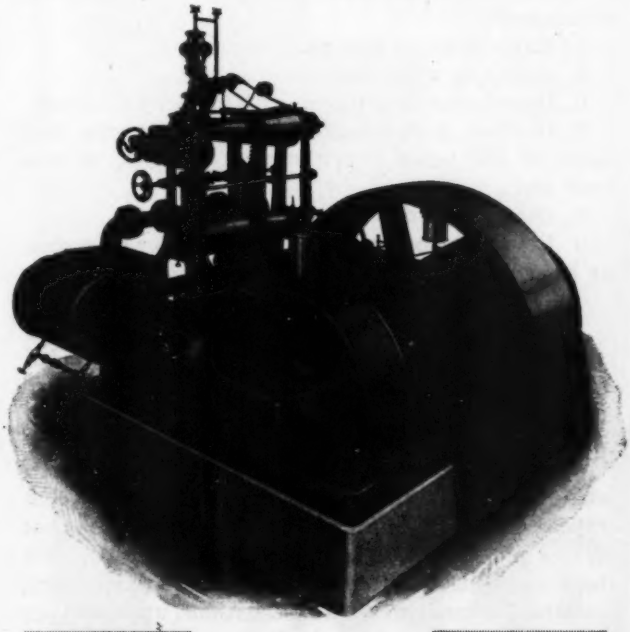
Inquirers Please Mention THE PAPER INDUSTRY



THE BALL VARIABLE SPEED ENGINE

solves the problem of your variable speed drive. Its reliability results in maximum production. That's why ***one in every three of these engines is a repeat order.***

Ball Engine Co., Erie, Pa.

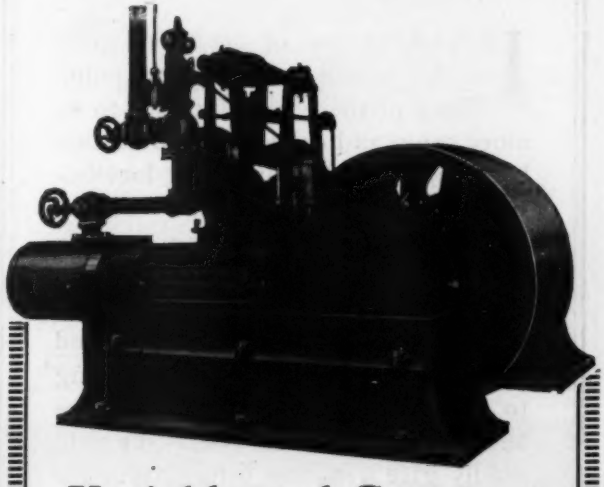


Variable Speed Engine

The engine illustrated above is especially designed to drive paper machines, giving continuous and reliable service. A patented safety device protects your employees and plant.

THE BROWNELL CO., Dayton, Ohio

SEND FOR BULLETIN E-4



Variable and Constant SPEED ENGINES

Paper Mill Economy is assisted very materially by the installation of High Grade Variable Speed and Constant Speed Engines.

Send for List of Installations and Catalogs

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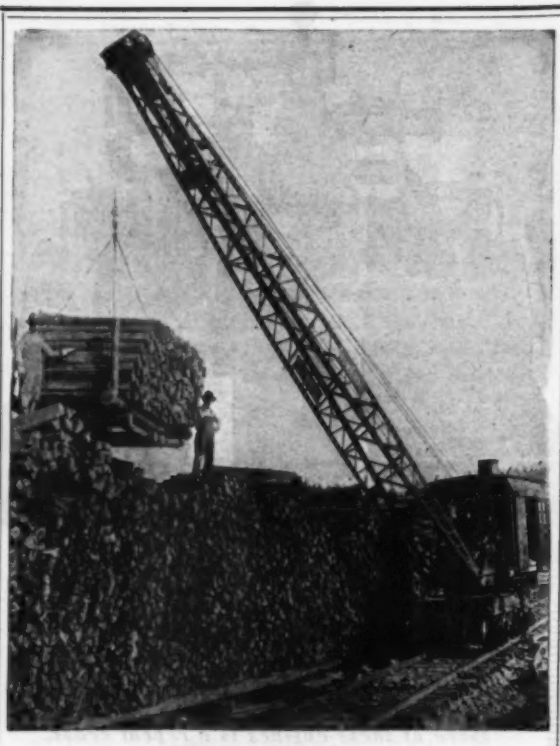
Indianapolis, Indiana.



BROWNHOIST

Handling Materials at the Mill

IS YOURS one of the many mills which handles considerable pulp? Some of these have found it to be more rapid and economical to do this handling with a Brownhoist locomotive crane. A Brownhoist will not only place the pulp wherever it is needed, but will handle your coal, switch the cars and take care of innumerable jobs which come up around the yard. If you have much handling to do, our long crane experience should be of use to you. We will gladly give you any information for the asking.

The
Brown Hoisting Machinery Co.
CLEVELAND, OHIO, U.S.A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in New York, Pittsburgh, Chicago and San Francisco.

Taylor consists of a series of alternate retorts and tuyeres, sharply inclined toward the rear of the furnace. Each retort is filled with two rams—the upper for pushing the green coal inward and upward—the lower for forcing the fire toward the dump plates at the rear. The dump plates referred to are hung on the rear of the wind-box. They are controlled from the front of the furnace. This stoker may be operated efficiently and smokelessly at the heaviest known over-loads, hence it is frequently found in the largest plants. Stoker and blower are operated by the same engine, and power required for this purpose is from 2.5 to 5 per cent of steam generated, making it probably the highest steam user among the stokers.

The Riley is a multiple retort stoker, the distinctive feature of which is that the sides of the retort reciprocate relative to the bottom. This arrangement results in the fuel being moved at a uniform rate out of the retort and across the ash supply porting plates until it is discharged through adjustable openings next to the bridge wall.

Points to Remember Regarding Stoker Operation

Here are a few points to remember regarding stoker operation:

1. Draft must be under close control at all times.
2. Keep air vents open.
3. Look out for air leaks, particularly after making adjustment.
4. Make frequent flue gas analysis.
5. Keep side walls clean of adhesions.
6. Do not stop stoker long, with hopper full of coal.
7. In chain grates make adjustment of gate and speed if fire tends to withdraw from gate or run over end.
8. Coking coal may require slice bar.
9. In washing outboiler, do not get water on arches or brickwork.
10. Do not pull dead plates entirely clear of ash.
11. Keep ash-pit cleared out.
12. Have all necessary maintenance work attended to promptly.

Summary

We have found that the chain grate stoker is suitable for boilers of quite good size, up to 250 per cent rating, and that its important characteristic is that grates must be designed for the fuel burned. We have shown that the over-feed stoker is particularly suitable for medium sized installations, up to 200 per cent rating. The down-draft furnace, particularly for small boilers operated at non-excessive ratings, offers a comparatively inexpensive substitute for certain functions of the mechanical stoker. And finally, we have placed the under-feed stoker as the apparatus for large boilers, operated at extremely high ratings.

AJAX
Rocking Grates

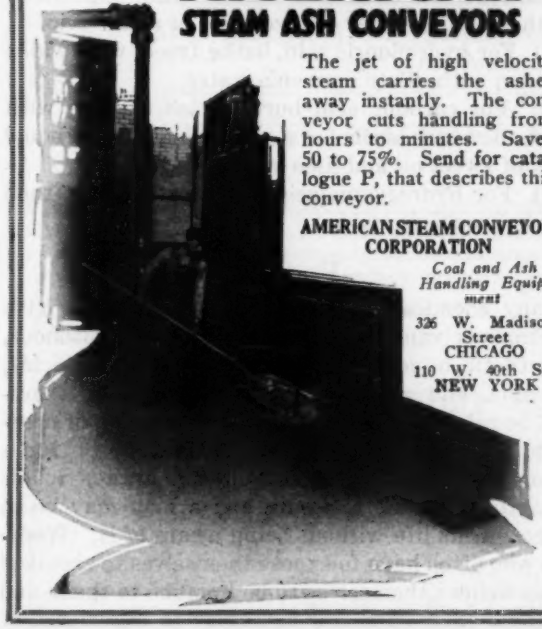
15% Less Coal
an increased steam capacity and lower maintenance and labor costs-

VALLEY IRON WORKS
WILLIAMSPORT PENNA.

Do You Have Many Ashes to Handle?

Every pulp and paper mill of any size has ash handling problems. Over fifty mills have solved their problems satisfactorily—they are now using

AMERICAN
STEAM ASH CONVEYORS



The jet of high velocity steam carries the ashes away instantly. The conveyor cuts handling from hours to minutes. Saves 50 to 75%. Send for catalogue P, that describes this conveyor.

AMERICAN STEAM CONVEYOR CORPORATION
Coal and Ash Handling Equipment
326 W. Madison Street
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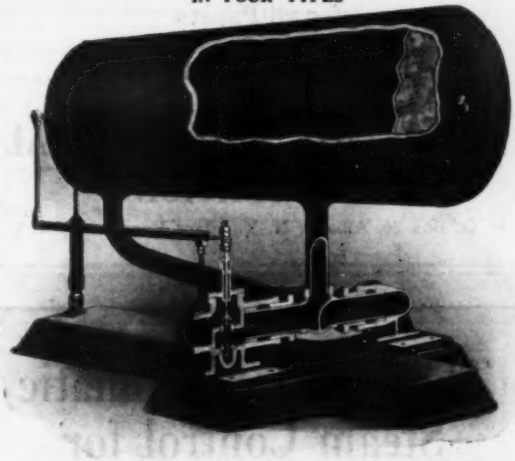
The ELLIS AUTOMATIC TILTING STEAM TRAP
IN FOUR TYPES



Vacuum Traps, Direct Return Traps
Lifting Traps, Separating Traps
ESPECIALLY ADAPTED FOR PAPER MILL USES.

The best trap made to remove the steam condensation from paper machine dryers. Works on a new and improved principle different from any other trap on the market.

Let us send you further information.

THE ELLIS DRIER COMPANY
332 South LaSalle Street Chicago, Ill.

WE-FU-GO AND SCAIFE
WATER
PURIFICATION SYSTEMS
SOFTENING & FILTRATION
FOR BOILER FEED AND
ALL INDUSTRIAL USES
WM. B. SCAIFE & SONS CO., PITTSBURGH, PA.

"Empire Products"

ROSIN SIZING
that will Size

ENGLISH COATING CLAYS
that will Coat

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that Fill

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that is Satiney

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that Cleans

TALC
for all Papers

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EMPIRE SIZE AND CHEMICAL CORPORATION

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The Stickle Automatic Steam Control for Paper Machines

WE wish to emphasize the word "automatic." This with us means that the steam follows changes that come to the sheet from free to hard drying stock or any ordinary changes in weights. A control that does not do this in itself is not automatic. This makes a better sheet of paper. We guarantee to hold the moisture at any point you wish with ½ of 1% change. Furnished on 60 days' approval.

OPEN COIL HEATER & PURIFIER CO.
INDIANAPOLIS, IND.
BOSTON PHILADELPHIA

Acids and Caustics

(*Continued from page* 1003)

cautions should be taken to see that every container is marked in plain, large letters showing the contents and uses of each. If two or more solutions are placed on the same rack, it is well to have them of different color. One solution may be white or colorless, and a harmless vegetable coloring matter may be added to make another red; or different colored bottles may be used.

It is a general rule that acids neutralize caustics and alkalis, and vice versa, but this rule is not infallible. It is, therefore, preferable to know the best neutralizer for each chemical.

First-Aid for Chemical Burns

(a) For acid burns—nitric, sulphuric mixed, hydrochloric, acetic, oxalic, and picric (for oleum, first wipe off clean with a clean cloth), bathe freely with water and apply a saturated solution of bicarbonate of soda.

(b) For alkalis,—caustic potash, caustic soda, ammonia, lime, and soda ash,—bathe freely with water and then apply a 2 per cent solution of acetic acid.

(c) For hydrofluoric acid, bathe freely with water and then with dilute ammonia water.

(d) For carbolic acid burns, wash at once with water, then with alcohol or a solution containing equal parts of sweet oil and lime water.

(e) For hydrocyanic acid, wash with water, then with hydrogen peroxide.

Fumes

Many chemicals and mixtures of chemicals give off fumes or vapors that are dangerously poisonous, anaesthetic, or corrosive. This is true of many acids, ammonia, and alcohol. Precautions should, therefore, be taken to prevent the fume poisoning of operators. One exceedingly serious feature of fume poisoning is that the effects do not always follow promptly upon the exposure and a man may be in danger of his life without being aware of it. Workmen who often have to expose themselves to chemical fumes believe themselves to be immune to them, and attribute their supposed immunity to experience or to a superior constitution. This belief, however, is utterly without foundation. Fatal fume poisoning may follow an exposure that does not appear to be particularly more severe nor worse than the same man has undergone repeatedly on other occasions without any apparent ill effects.

It is essential to maintain high grade medical supervision in every plant where chemicals are used. It is good practice to examine physically all workmen before they are accepted for employment, to make sure that they have no pre-disposing defects that will make them especially liable to sickness or injury from acids or caustics. It is also advisable to re-examine the men at regular intervals to determine what effect the work is having upon their health.

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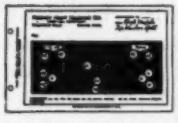
For all makes and sizes of Machines, including Textile, Paper, Laundry, Tanning, etc.



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RODNEY HUNT MACHINE COMPANY, 45 Mill St., Orange, Mass.
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We Build

Suction Couch and Suction Press Rolls

in 10″ 14-9/16″, 18″, 22″ and 25″ Diameters,
to conform to any width or speed machines.

One Cylinder Machine, equipped with Millspaugh Suction Press Roll and one other Press, both on same felt, which delivers the sheet to the dryers 44 per cent dry. On a two-width trim produces an average of 48 tons per day running 51 pound sheets of Roofing Felt.

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Rubber Covered Felt Rolls

DO YOU KNOW

That we cover Felt Rolls with Rubber that give better service than Brass Covered Rolls?

Our Rolls wear perfectly smooth. When once installed they require no further attention.

Write for names of satisfied customers using our rolls.

We Are Rubber Roll Specialists
Our Press Roll Stocks Are
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Boxboard, Newsboard and Chipboard Mills—20, 50 or 70 tons capacity.

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At a real bargain price, Excellent Rebuilt German Paper Machine for immediate delivery—59-inch trim, for the manufacture of machine finished Papers glazed on one side—with capacity of 6 to 8 tons per 24 hours. Complete Blue Prints and Specifications ready for inspection at our office.

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Our Motto, "Service First"

When a man is compelled to breathe an atmosphere charged with chemical fumes, he should take short, shallow breaths. The fumes will then come in contact only with the upper air passages and comparatively small part of the lung tissues.

Respirators and helmets will often afford protection against fume poisoning. The simplest form of respirator consists of a handkerchief or piece of cloth tied over the nose and mouth. Respirators with valves are practically worthless in this work, for the metal is liable to corrode or rust and afford no protection whatsoever. Many patented respirators hold a sponge which users are advised to saturate with an alkaline solution. To be very effective, however, the alkaline solution must be strong and there is then danger of receiving alkaline burns. The most common solutions for protection against acid fumes are a 20 per cent solution of caustic soda, or a saturated solution of ordinary washing soda, or sodium bicarbonate. Boric acid and glycerine are used for protection against ammonia fumes.

Many people believe that the United States army gas mask affords ample protection against all sorts of poisonous or irritating gases. The mask does absorb many poisonous gases, but it does not supply oxygen other than that which is filtered through from the atmosphere. In other words, it furnishes no protection against an atmosphere where there is a material deficiency in oxygen. It is suggested that prospective buyers consult the United States Bureau of Mines, Washington, D. C., before purchasing or using United States army gas masks.

There may be occasions when respirators are the only protection available, but it is much safer to wear oxygen or air helmets when entering rooms or descending into tanks or vats that are liable to contain noxious fumes or vapors. Some employers do not depend upon self-contained air helmets, but specify oxygen helmets or ones where air is supplied by an air line from an outside source. In selecting a man for work in a tank, care should be taken to choose a thin or medium-built man of light weight. He should have a heavy leather strap or thoroughly tested rope securely fastened about his body under the arms. The other end of the strap or rope should be securely tied outside and attended by two workmen who will be able, if necessary, to render assistance at once. After the work is completed, the man should immediately take a bath and change his clothing. This will minimize the danger of burns that may result from acid eating or soaking through the clothing.

To prevent fume poisoning, the first consideration should be to eliminate all fumes at their source. Proper ventilation may be secured through vents in the roof so arranged that they can be kept open even when it rains. This will usually give satisfaction in eliminating fumes that are lighter than air and will even be of considerable value in carrying off fumes

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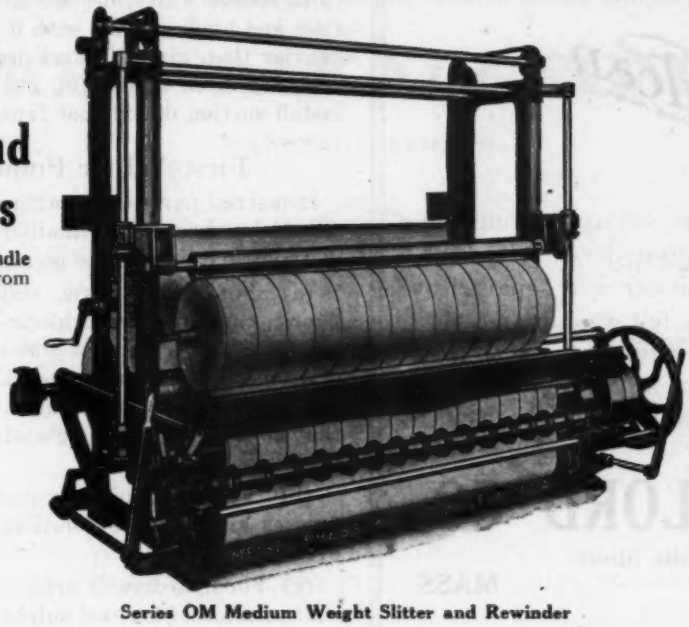
Any width, to handle any weight paper from tissue to cardboard.

Rolls up to 40 inches in diameter



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Adjustable Sheet Cutters

for tissue, waxed and other papers.

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The plant of the St. Maurice Paper Co., Ltd., at Cape Madeline, Canada, is Swenson equipped.

A Swenson Quadruple Effect Evaporator has been in operation here since May, 1917. It is used for concentrating "Black Liquor" in sulphate pulp process, and results, according to the plant superintendent have always been exceptionally good.

For increased output—lowered production costs—larger profits, it pays to specify Swensons.

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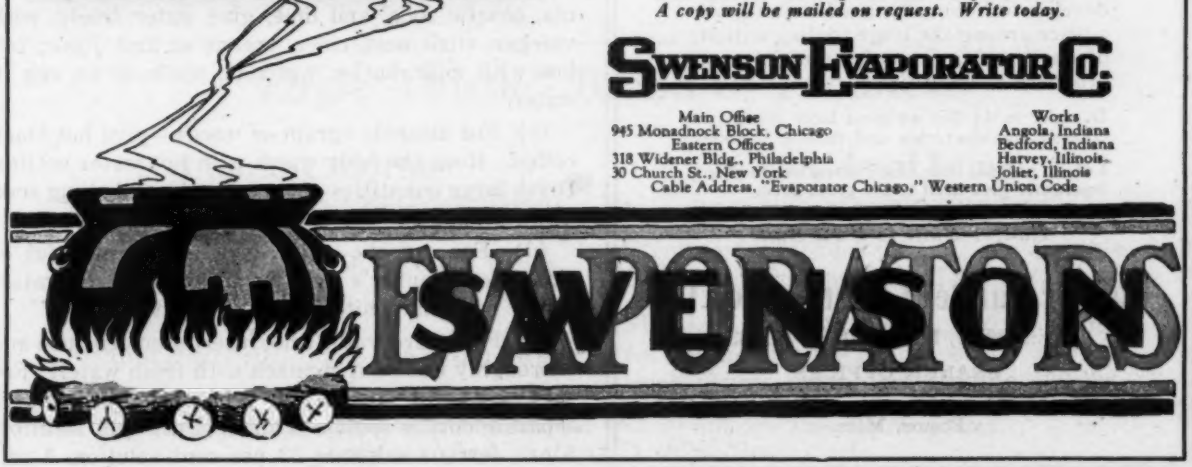

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Our services are at your disposal at all times, and all inquiries will be attended to in our most scrupulous and conscientious manner.

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The history of American business development shows that its remarkable progress is due largely to the courage, foresight, boldness, and broadness of vision of our leaders.

Such qualities were never needed more than they are today.

If we are to pay our huge war bills, develop our domestic markets and take a place among the large trading nations of the world, we must multiply our production many times.

In order to do this we must have greatly increased manufacturing and trading facilities.

Let us not pay too much attention to prices but rather give heed to the great need.

Ranger Built Is Well Built

Casper Ranger Construction Co.

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BRANCH OFFICES

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that are heavier than air. A further precaution is to introduce warm, dry air at the floor level. This rises and tends to take with it many vapors that are heavier than air. Natural draft hoods or fresh-air fans are often successful, but the surest way is to install suction or exhaust fans.

First-Aid for Fume Poisoning

Industrial nurses and others in charge of first-aid should be thoroughly familiar with proper first-aid methods in case of fume poisoning.

(a) For acids—nitric, sulphuric, mixed, hydrofluoric, carbonic, hydrochloric—mix fifteen drops of chloroform in a glass of water with a tablespoonful of aromatic spirits of ammonia. This mixture should be administered to the patient a little at a time so that he takes the whole glassful in from thirty minutes to an hour.

(b) For ammonia, frequently apply cold compresses and aqueous solutions of boric acid to the eyes.

(c) For hydrocyanic acid, mix one ounce of 23 per cent solution of ferrous sulphate, one ounce of 5 per cent solution of caustic potash, and 30 grams of powdered magnesium oxide in half a pint of water. Shake the mixture and administer to the patient.

Internal Poisoning

When poisons are taken internally, the usual procedure is to induce vomiting. This general rule should not be followed, however, when caustic alkalis or acid poisons are swallowed. Antidotes should be taken into the stomach as soon as possible.

First-Aid for Internal Poisoning

(a) For acids—sulphuric, nitric, hydrochloric, mixed, hydrofluoric, oxalic, picric, and acetic—give powdered chalk or magnesia with a large quantity of water, or give washing soda, soap or wood ashes with water; follow with milk, olive oil, or white of an egg in water.

(b) For alkalis—caustic potash, soda ash, ammonia, caustic soda, and lime, give water freely, with vinegar, citric acid, cider, orange or lime juice; follow with milk, barley water or white of an egg in water.

(c) For alcohols (grain or wood)—give hot black coffee. Keep the body warm with hot water bottles. Drink large quantities of water to which baking soda has been added.

(d) For carbolic acid, give a tablespoonful of Epsom or Glauber's Salts in a cup of warm water; follow with the white of egg and water.

(e) For hydrocyanic acid, insert stomach tube and thoroughly wash out stomach with fresh water. For sodium cyanide (96-98 per cent) have on hand in separate bottles sodium hydrate 1 per cent solution, 5 oz.; ferrous sulphate 33 per cent solution, 1 oz.;

DIAMOND ALKALI COMPANY

MANUFACTURERS OF

Soda Ash 58%

Modified Sodas

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Caustic Soda 76%

Special Alkalies

BICARBONATE OF SODA, U. S. P.

Our complete Works, located at Painesville, Ohio, directly situated on three Trunk Line Railroads, are in position to serve you to advantage.

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Liquid Chlorine

One hundred per cent pure anhydrous for use **with any control apparatus.**

Shipped in 105 lb., 150 lb., 2000 lb. Cylinders and Containers. Also shipped in Tank Cars when required.

Prompt shipments made due to our large capacity.

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HIGH TEST BLEACHING POWDER

Strongest, quickest settling, most stable Bleaching Powder manufactured.

Shipped in 225 lb., 450 lb., 750 lb. drums for domestic trade. **Special wooden lined drums for export holding 400 lbs.**

If you have a problem to solve write us, and we will give same the closest and Promptest attention of our Technical Service Staff.

Get Your Copy of the Latest Bulletin on Better Belt Service

As a practical man you know that no belt can give better service than its joint.

To enable you to get the **maximum** of service out of your belting, we have prepared this booklet—"Modern Scientific Methods of Belt Joining."

It actually **informs**—rather than argues.

Absolutely devoid of vague theorisms and selling buncum, it gets right down to brass tacks in the "how" and "why" of making belt joints with Crescent Belt Fasteners that will **hold** for the life of the most durable belt; joints that will not weaken the belt; belt joints that will run the same as endless on the pulley side, without noise, clatter or thumping; belt joints that will insure maximum power transmission and continuous production.

Every condition of belt service is completely and accurately covered, and classified for **instant reference.**

"Modern Scientific Methods of Belt Joining" in your Belt Room will mean dollars in your pocket.

A copy is yours for the asking. Just tell us to send you Booklet Q-1.

Crescent Belt Fasteners will be sent on 30 days' free trial. Advise us the width and thickness and pulley diameters on any drive you would like to try them. No charge or obligation involved, until after 30 days you are entirely satisfied.

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CRESCENT
Make Good Belts Give Better Service
BELT FASTENERS

calcined magnesia, 2 grams. Mix, when required, and cause the patient to swallow.

Fires

Some acids in their action on animal and vegetable substances develop heat that may be great enough to set fire to clothing, straw, wood, and other combustible material. In extinguishing a fire caused by acid, it is best to cover the fire with a woolen blanket or with loose dirt or sand. Water or chemical extinguishers may put out the fire, but they are liable to increase the fumes to such an extent that they become more dangerous than the fire.

Explosions

Some acids, though usually not so considered, are explosive, for in their action on metal they are apt to generate enough hydrogen to produce explosive mixtures. Open flames, lights, or work of any sort which is liable to cause a spark should, therefore, be avoided around tank cars, tanks, drums, or any metal container used for holding acid.

Extreme care should be exercised in mixing chemicals, or bringing one into contact with or even near to another; chemical actions may develop unnoticed. Many serious explosions have resulted from ignorance or carelessness on the part of workmen and chemists. In diluting an acid with water, the acid should always be added to the water, not the water to the acid. The acid should be slowly added, and the mixture should be stirred constantly.

Shipping and Storage

Acids are usually shipped (shippers of chemicals should be careful to observe the shipping regulations of the Interstate Commerce Commission) or stored in one of four different ways: in (a) large tanks or vats; (b) metal drums; (c) glass carboys; (d) small jugs.

When a new shipment of liquid chemicals is received, it is well to open the containers at once to relieve any internal pressure which may have developed. If necessary, some of the contents should be removed. It is advisable to leave a 10 per cent air space in each container. This will safely care for ordinary extremes in temperature. After this is done, the containers should again be sealed. Except when the contents are being drawn, all containers should be tightly closed. This will prevent fumes leakage and will to some extent stop any corrosive action the chemical may have on the container.

Tanks and Vats

Where acid is received in tank cars and stored in quantities, it is well to have the storage tank located underground so it can be filled by gravity. Where this is done, the storage tank should be placed in a substantial cement or brick-lined pit, the walls of which are far enough away from the tank to allow access for complete inspection.

Every tank that is used for the storage of chem-

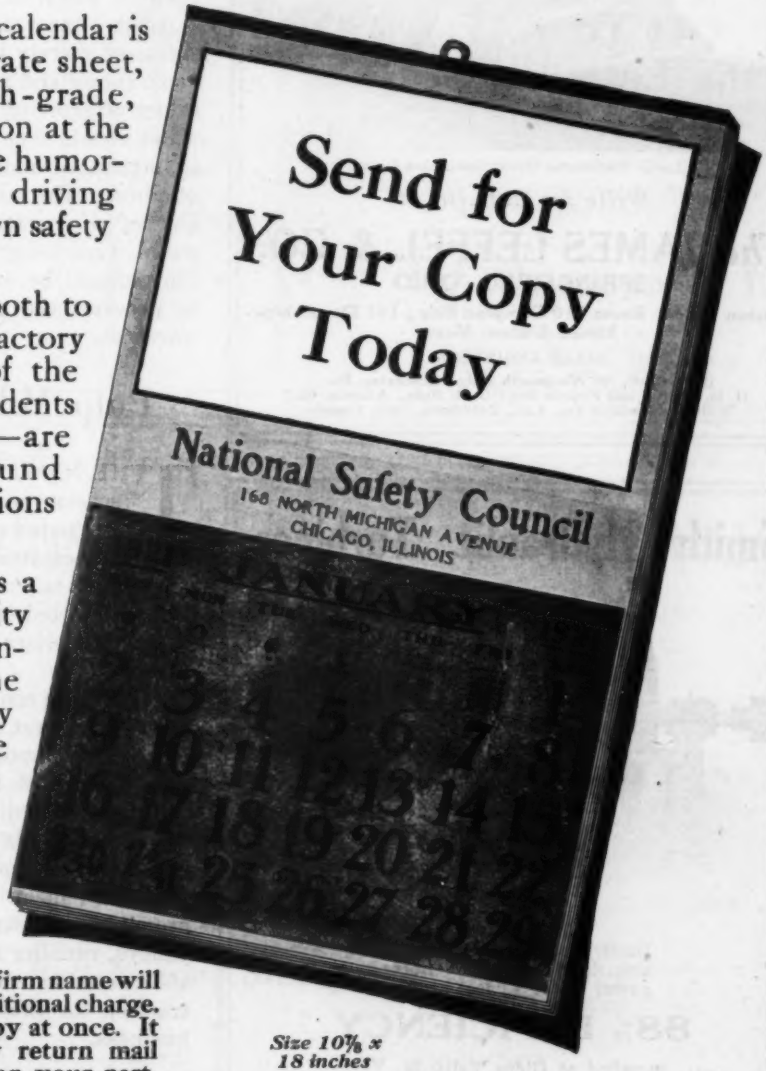
The 1921 Safety Calendar Is on the Press

There Is Only One Safety Calendar Printed Each Year and This Is It

Each month of the calendar is printed on a separate sheet, with a clever, high-grade, three-color illustration at the top of each. Twelve humorous pictures, each driving home forcibly its own safety message.

Hazards common both to the home and the factory—serious because of the frequency of the accidents which they cause—are the subjects around which these illustrations are built.

This calendar offers a splendid opportunity to round out safety instructions given to the man in the shop by carrying the message into his home, to his wife, and to his children, and through them, back to him.



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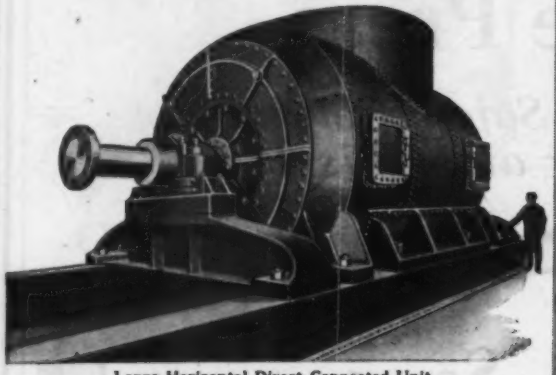
168 North Michigan Avenue, Chicago, Illinois

Leffel Turbine Water Wheels

High Speed — High Horsepower — High Efficiency

Vertical and Horizontal Designs



Large Horizontal Direct Connected Unit

Write for Bulletin 54

***The* JAMES LEFFEL & CO.**

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B. F. Groff, 556 Woolworth Bldg., Lancaster, Pa.
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Smith Hydraulic Turbines

Illustration shows horizontal unit developing 2,400 horsepower under 42 feet head, at

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installed at Glens Falls, N. Y., Mill of International Paper Co.

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icals should be so installed as to minimze the danger in case the tank should rupture and the contents escape. The tank should be supported in such a way that leakage from any part of it would be immediately noticed, and it should be covered, externally, with a suitable protective paint that will prevent corrosion from moisture, fumes, and other causes. It is also wise to surround the tank with a pit, catch basin or depression of some kind, large enough to hold the entire contents of the tank in case of rupture. This will not prevent the formation of fumes but will at least localize the liquid and prevent it from flowing into workrooms and other places where it would be dangerous.

After a tank or a vat has been emptied, it is not sufficient merely to wash it out with water. To remove fumes and remaining particles of acid, the container after being washed thoroughly with plenty of water should then be cleaned further with steam that is introduced under considerable pressure by means of a hose. The hose should be directed against every part of the surface of the tank just as though the metal were being washed with a stream of water. Care should be exercised in handling a steam hose to prevent the scalding of operators and fellow-workmen.

Pulp Mills in Newfoundland

(Reprinted from Chicago Daily News)

THE NEWFOUNDLAND legislature at its last session enacted measures enabling two pulp and paper companies, one British and one Norwegian, to establish industries within the island, circumstances taken as an indication that capitalists are being attracted to this country and that before long other enterprises of the same character will be set on foot.

The British company is locating at Bonne bay, midway up the west coast, heretofore best known as the scene of an important and successful winter herring fishery, but with areas in the vicinity thickly wooded and rivers affording sufficient water power to justify the promoters in believing that they can make it a success. The Norwegian company is located in Bonavista bay, in an area where codfishing is the most prominent industry, but where a series of well wooded valleys, running far into the interior and drained by substantial rivers, has for a long time formed an attraction for those interested in the pulp and paper business.

War Stopped Operations

Before the war those who have recently acquired land and other capitalists as well, were negotiating for these properties, but the opening of hostilities compelled an abandonment of operations there, as in other quarters. The world wide demand for paper, however, which is becoming more pressing every day has stimulated anew the utilizing of all suitable areas

"Boys, This Will Pay Our Salaries!"

This is what the General Manager of one of the largest paper mills in this country said to the Superintendent and Boss Machine-tender after installing a

WILLIAMS STANDARD PAPER MOISTURE TESTER

Was He Right?

Figure it out. You know your production. If you are shipping out your paper 2 or 3 per cent too dry, figure your loss in tonnage to which you are entitled. (Tests at one mill showed a variation of 8% in moisture content.)

Other losses are:

Fuel loss in over-drying.

Production loss due to more breaks in over-dry paper.

Is over-dry paper more satisfactory to your customer? NO.

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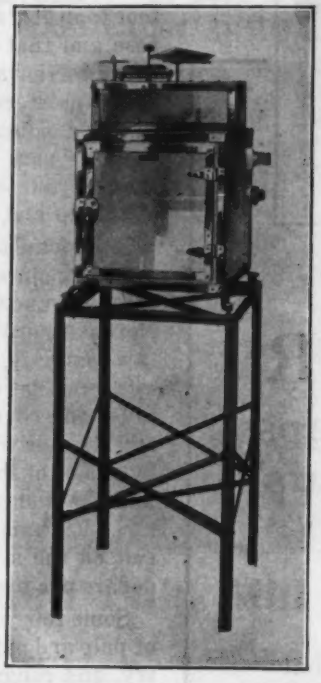
Send today for descriptive matter



Description

A compact apparatus which will give you in 10 minutes the exact moisture of content of your paper as it comes off the machine.

Accurate to .1 of 1%.

No special skill required to operate. Anyone who can weigh roll paper or get the base weight of a sample can operate it.

Double walled electric oven with thermostat control, accurate scales, with beam graduated to read % of moisture directly. No calculation required.

Tests all kinds of paper from tissue to board.

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Every Paper Mill Can Profitably Use One or More of These Outfits. In Some Mills, One Will PAY FOR ITSELF IN ONE DAY.

The Carthage Machine Company

The Carthage Chipper
BETTER THAN EVER

The Carthage Improved Chip Crusher
AS GOOD AS THE CHIPPER

The NEW Carthage Pulp Shredder
A REMARKABLE PERFORMER
IT DOES WHAT NO OTHER SHREDDER CAN DO

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KEEPS DIRT OUT OF YOUR SHEET

The Carthage Ball Bearing Straightway Blow Valve
IT IS VERY DURABLE IT IS EASY TO HANDLE

Barkers	Pumps	Wet Machines
Wood Splitters	Chip Screens	Plug Machines
Pulp Grinders	Sulphur Burners	Bronze and Lead Work

The Carthage Machine Company

Carthage New York

WHEELER
Centrifugal Pumps Backed by 23 Years' Experience

IT does not matter for what service you want centrifugal pumps, or how many you want, we can furnish them.

Wheeler centrifugal pumps are designed for capacities from 20 to 100,000 gallons per minute —for any commercial head— any kind of drive—with horizontal or vertical shaft.

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96

for this purpose and these two undertakings are expected to lead the way to others within the next year or so.

It is understood that negotiations are at present on foot to utilize areas on the south coast for a like purpose and that an enterprise of substantial shape in this direction will probably come into existence within the next few months. In addition, the extensive timber holdings of the Reid company, obtained by them as part of the price for the operating of the island's railroad system, may also be made the basis of a pulp and paper concern.

Newfoundland enjoys the great advantage in regard to pulp and paper making that it can produce these commodities cheaper than any other part of North America. This is due to the fact that the raw material—the spruce and fir logs from the forests—can be obtained cheaper than elsewhere, because the country is so thickly seamed with rivers and streams that logs can be floated almost anywhere by means of these water courses. The unskilled labor likewise is cheaper than in the neighboring countries, and, although mill costs are somewhat higher, the result on the average is that an advantage of several dollars per ton accrues in favor of Newfoundland.

Some few years ago, when the question of the price of pulp and paper in America was agitating that country, and congress had ordered an investigation into the whole subject, the manager of the great Harmsworth (Anglo Newfoundland Development Company) mills at Grand Falls was invited to Washington to testify before the commission on the subject. His evidence was that Newfoundland, despite supposed drawbacks, was able to turn out pulp and paper $7 a ton less than American mills claimed it cost to produce.

One of the causes recently preventing further development of the Newfoundland areas has been the scarcity of shipping for the conveyance of manufactured products overseas and a scarcity of labor in the island due to so many young men still in war service. Now, however, the return of Newfoundland's sons from the war theaters enables the full manhood of the country to be drawn upon for this and other industries.

Hereafter no difficulty should be experienced in these respects and all that remains is to satisfy investors that the forest resources justify their embarking upon these enterprises.

It is possible that at the session of the legislature next spring an enactment will be sought enabling the establishment of a paper and pulp mill, a saw mill and a veneer mill at St. Georges on the west coast.

The company promoting this enterprise is composed of British and American capitalists who control about 1,500 miles of timber in the St. Georges area and about 1,000 miles at Grand Lake where they may also erect a pulp and saw mill and freight the products to the docks at St. Georges by rail. The

The BLACK-CLAWSON Co.

HAMILTON, OHIO

Builders—**Paper and Pulp Mill Machinery**—*for*

INCREASED PRODUCTION **SERVICE ALWAYS**

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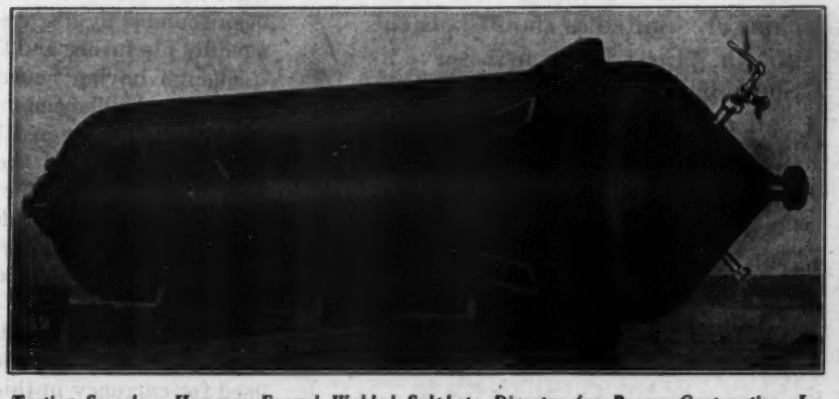
Seamless Welded
DIGESTERS
and **TANKS**

FOR PAPER AND PULP MILLS

We make them of any thickness, diameter or length for paper and pulp mill uses.

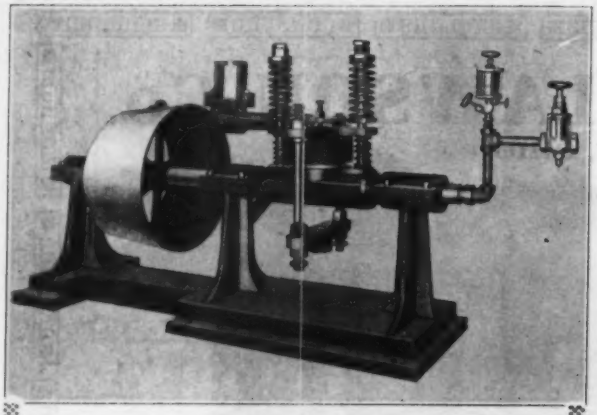
WITH your mill running 24 hours per day and still unable to meet all the demands of your customers, a leak in your digesters or tanks means a big loss to you. You will avoid all this trouble if you install Kellogg's Seamless Digesters and Tanks, welded by the Forge and Hammer Process, the strongest weld of any process in existence.



Testing Seamless Hammer Forged Welded Sulphate Digester for Brown Corporation, La Tuque Mill, Quebec.

To the man that is willing to be "shown," just ask us to prove their economy and efficiency. A letter will start the ball-a-rolling.

THE M. W. KELLOGG CO. **140 Cedar Street, New York**



This is the NASH AIR SHAKE, which will produce a more even shake, and therefore better sheet of paper than can be made by any present method.

Prepare for Normal Times

THIS is the advice of the management of a mill that has never solicited for business. Make your paper better than your competitor and you will get the business. The **Nash** Air **Shake** will do this for you, and then some; but remember the facilities for building this machine are limited to about six each month. First come first served. Some of you must wait, but do not wait too long or you won't be in line. People are not reading ads for amusement, they seek information, and they want it from a man who seems sincere.

I am sincere.

WILLIAM C. NASH

NEENAH, WIS.

idea is to export the pulp and paper to England and United States and to manufacture lumber, barrels and boxes for the local market and possibly for exportation as well. The mills are to be erected between the mainland of the Island railway and the waterside in St. Georges harbor where a large pier will be built enabling ocean going ships to load in safety.

Winthrop Murray Crane

The death of W. Murray Crane, widely known paper manufacturer and former Governor and United States Senator from Massachusetts, has thrown a veil of sorrow over the hosts of friends he had throughout the Nation.

Suffering from a severe illness of several months, he succumbed to an attack of inflamation of the brain on October 2, 1920, at his home in Dalton, Mass. His immediate family was at his bedside. The Rev. Ralph M. Timberlake, pastor of the Congregational church, which Mr. Crane attended, conducted the services, which were public, and the burial took place in the family lot in the Dalton cemetery.

The active pallbearers included superintendents of four of the Crane paper mills, Frank H. Cleveland, Theodore M. Pomeroy, Frederick New and William S. Warren.

The honorary pallbearers were Hon. William H. Taft, Arthur W. Eaton, Solomon B. Griffin, William M. Butler, Irving D. Ferrey, Charles D. Hillis, Henry B. Thayer, Hon. John B. Weeks, Daniel Woodhull and Frank W. Anderson.

Governor Coolidge, Lt. Gov. Cox, members of the Executive Council and delegates from each branch of the legislature attended the funeral.

Winthrop Murray Crane was born in Dalton, Mass., April 23, 1853. He was educated in the public schools and Williston Seminary and instead of entering college, he went to work in the paper mill which had been founded by his grandfather in 1801, later managed by his father and then by him.

Though having never entered college, Mr. Crane was a very brilliant man and had conferred upon him in 1903 the degree of LL.D. by Harvard University.

Mr. Crane served the State of Massachusetts as Lieutenant Governor for three years and Governor for three years. Upon the death of Senator Hoar in 1904, he was appointed to serve as United States Senator for the unexpired term and was later elected for a full term.

Probably his greatest achievement, however, was the fact that he was the manufacturer of the paper used for currency in this country since 1880.

On or about October 11, 1920, the office of Joseph O'Neill Wire Works will be located at Port Chester, N. Y., where they will be much better equipped to handle their business to the best advantage to their patrons.

EASTWOOD Wire Mfg. Co.

Fourdrinier Wires
Cylinder and Washer Wires

Belleville, New Jersey
U. S. A.

WE ALSO MANUFACTURE

Valves, Unions, Cocks, Fittings, Digester Parts, Castings, etc., for Sulphite Mills from Our Perfection Bronze

The LINDSAY Wire Weaving Co.

Manufacturers of

DEPENDABLE FOURDRINIER WIRES

Cylinder Covers and Other Paper Machine Wire Cloth

All Well Made at

Collinwood Station CLEVELAND OHIO

FOURDRINIER WIRES

Dandy Rolls *Cylinder Molds*
Brass, Copper and Iron Cloth
Bank and Office Railings

WIRE SIGNS

Cheney Bigelow Wire Works

Established 1842 SPRINGFIELD, MASS.

UNION SCREEN PLATE CO.
Fitchburg, Mass., U. S. A. Lennoxville, P. Q., Canada

UNION BRONZE SCREEN PLATES
(Best phosphorized Cast Metal)

Old Plates RECLOSED and RECUT to accurate gauge
UNION BRONZE SCREWS for Screen Plates
Immediate Delivery of the Largest Orders. Satisfaction Guaranteed

The Witham Screen Plate Fastener, Patented
THE ORIGINAL THE BEST

SCREEN PLATES *and* DANDY ROLLS

Watermarking a Specialty

Central Manufacturing Co.
The Quick Service House
KALAMAZOO MICHIGAN

Remember
WM. A. HARDY & SONS
FITCHBURG, MASS.
Originators and Oldest Manufacturers
OF THE
Cast Bronze Screen Plate
ALSO SPECIALIZE IN
Acid Resisting Digester Parts

Ticonderoga Machine Works
TICONDEROGA, N. Y., U. S. A.
MANUFACTURERS OF
WARREN IMPROVED CALENDER DOCTORS
With Flexible Blades, Universal Adjustment and Control
(PATENTED)
WARREN IMPROVED PATENT DOUBLE DRUM WINDERS
Patent BALL VALVE Hydrant
Stock Circulating Systems *and*
other Paper Mill Specialties
SEND FOR OUR BULLETIN

T. A. P. P. I. Activities

Committees of the Technical Association of the Pulp and Paper Industry which have been fully organized and are now at work on subjects which have been assigned to them are as follows:

Abstracts of Literature. Ross Campbell, Chairman, American Writing Paper Company, Holyoke, Mass. E. C. Tucker, Crocker-McElwain Company, Holyoke, Mass. John Traquair, Management Engineering and Development Company, Chillicothe, Ohio.

Auditing. E. C. Tucker, Chairman, Crocker-McElwain Company, Holyoke, Mass. Leon H. Yoerg, Carew Manufacturing Company, South Hadley Falls, Mass. John D. Rue, Mead Pulp and Paper Company, Dayton, Ohio.

Bibliography. Clarence J. West, Chairman, 30 Charles River Road, Cambridge, Mass. Dard Hunter, The Mountain House, Chillicothe, Ohio. Robert W. Sindall, 27 Walbrook, London, E. C. 4, England.

Coated and Processed Papers. Clarke Marion, Chairman, Champion Coated Paper Company, Hamilton, Ohio. Norman Clark, Nashua Gummed and Coated Paper Company, Nashua, N. H. Harold H. Holden, Falulah Paper Company, Fitchburg, Mass. Edwin Sutermeister, S. D. Warren Company, Cumberland Mills, Me. Kenneth T. King, E. I. DuPont de Nemours & Co., Wilmington, Delaware.

Heat, Light and Power. Howard S. Taylor, Chairman, Management Engineering and Development Company, Dayton, Ohio. W. W. Cronkhite, General Electric Company, Schenectady, N. Y. Philip K. Fletcher, Fletcher Paper Company, Alpena, Mich. Loren L. Hebberd, Combustion Engineering Corporation, Chicago, Ill. R. W. Leeper, Management Engineering and Development Company, Dayton, Ohio.

Paper Testing. Frederick C. Clark, Chairman, American Writing Paper Company, Holyoke, Mass. G. R. Atkinson, Scott Paper Company, Philadelphia, Pa. Ross Campbell, American Writing Paper Company, Holyoke, Mass. Frederick A. Curtis, U. S. Bureau of Standards, Washington, D. C. E. Sutermeister, S. D. Warren Company, Cumberland Mills, Me.

Soda Pulp. George K. Spence, Chairman, New York and Pennsylvania Company, Johnsonburg, Pa. Grellet N. Collins, Dill & Collins Company, Philadelphia, Pa. Martin L. Griffin, Mt. Hope Fnishing Company, North Dighton, Mass. Wallace H. Howell, Jr., New York & Pennsylvania Company, Willsboro, N. Y. George M. Trostel, Champion Fibre Company, Philadelphia, Pa.

Standard Methods of Testing Materials Used in the Manufacture of Paper. E. C. Tucker, Chairman, Crocker-McElwain Company, Holyoke, Mass. G. R. Atkinson, Scott Paper Company, Philadelphia, Pa. Merle B. Shaw, U. S. Bureau of Standards, Wash-

J. A. & W. BIRD & CO.

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Satin White

All Kinds of Casein Solvents

Clay

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SUPERIOR ROSIN SIZE

Paper Makers Chem. Co.
Easton, Pa.
Holyoke, Mass.

Western Paper Makers Chemical Co.
Kalamazoo, Mich.
Pensacola, Fla.
Jacksonville, Fla.

Eastern Paper Makers' Chemical Co.
Watertown, N. Y.

Size or System?

Do you require a "Sizing System"? Or would you prefer to use ROSIN SIZE so carefully adapted to your needs that no expensive system is necessary to prove its economy?

OVER 300 PAPER MILL OWNERS

regular users of "Superior" Rosin Size—pay tribute to the thorough knowledge of paper-making chemistry possessed by our experts.

Let us confer with you on this very important subject. Our chemists will advise you—freely, anytime, anywhere.

Trimbey & Allen

GLENS FALLS, N. Y.

Manufacturers of

The Allen & Trimbey Automatic Continuous Mixing System

An automatic continuous mixing system which displaces Beaters or Mixing Tanks in Newsprint, Board and Book Mills, or any mills using "soft stock."

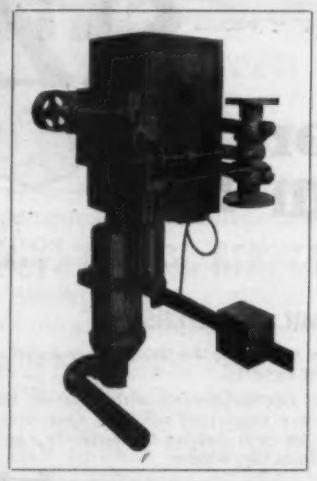
The Allen Automatic Cooking Control for Chemical Pulp

An automatic method which takes the place of the present uncertain manual control.

The Allen Stock Meter

A device for measuring the amount of "soft stock" made or used.

The Trimbey Automatic Consistency Regulator



A device that automatically holds stock at any set consistency as supplied either to Beaters, Mixers, or Paper Machines.

M. G. TIBBITTS, Sales Manager

ington, D. C. Frank M. Williams, 171 Mullin Street, Watertown, N. Y.

Vocational Education. George E. Williamson, Chairman, Strathmore Paper Company, Mittineague, Mass. R. S. Kellogg, Secretary, News Print Service Bureau, 18 East Forty-first Street, New York, N. Y. Henry J. Guild, Eastern Manufacturing Company, Bangor, Me. Otto Kress, Forest Products Laboratory, Madison, Wis. William S. Lucey, Hammermill Paper Company, Erie, Pa. Carlile P. Winslow, Forest Products Laboratory, Madison, Wis.

Western Newspaper Union Buys Mills

What is probably one of the biggest paper mill deals ever pulled off in Wisconsin was completed this week when the Western Newspaper Union, with headquarters at Chicago, took over the holdings of the Menasha Paper company, in Busk county, as well as the water power and dam at Ladysmith, owned by the Menasha Woodenware company. The deal involved several millions of dollars.

The property included the paper and sulphite mills at Ladysmith, and pulp mills at Port Arthur and Thornapple, four and six miles below Ladysmith, on the Flambeau river. The water power and dams went with each property. A miniature railroad connecting these various plants, as well as the rolling stock, was taken over.

The new company will be known as the Great Western Paper company. The combination of the plants make one of the greatest paper manufacturing concerns in the country, comprising ground pulp and sulphite plants, and papermills.

The Western Newspaper Union has thirty-eight branch offices about the country, supplying what is known as patent insides for newspapers. The product of their paper mills here will be used to make their supplies.

Harry Ballou, who has been manager and a heavy stockholder for years, will continue in charge of the properties. H. H. Fish, Jr., of Buffalo, son of the president of the purchasing company, will assist him in the business.

The Sandoz Chemical Works, Inc., 240 Water street, New York City, announce that they have taken over the aniline color department of F. Bredt & Co., of that city. The firm of F. Bredt & Co. will continue in business at 240 Water street as manufacturers, importers and commission merchants.

The American Paper Mills Corporation, 237 Lafayette street, New York City, has started to issue a monthly price list under the title of "The Ampamico Profit Maker," which is unique in that, aside from containing price lists, it has some other very interesting matter. The leading article in the October issue is entitled "Be An Optimist."

Heat and Ventilate

Plexiform Fan Wheel

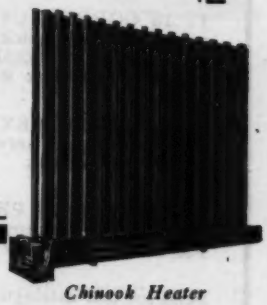
YOUR MILL at the lowest possible installation cost—with a minimum of space occupied by equipment and a greatly reduced maintenance and power expense—eliminates dripping from roof of machine room with

Bayley Chinook Heaters and Plexiform Fans

The Chinook is absolutely free from return bends, nipples and couplings. Each tube is a unit by itself that can be easily removed for repairs or replacement without dismantling the installation. Can be shipped K. D. The Plexiform Fan is accurately balanced, easy running (on ball bearings) so that it requires a minimum of power. So designed that it will occupy the smallest space—capacity considered. This, combined with great strength and durability, makes it the ideal ventilating agent.

BAYLEY ENGINEERS

Have made a special study of Paper Mill requirements and are therefore in position to give you some valuable data. Their services are yours for the asking.



Chinook Heater

Bayley Mfg. Co., Milwaukee, Wis.

The SCOOP Is The Point

In loading trucks from stock piles, etc., the scoop on the Scoop Conveyor adds greatly to its efficiency. The material is scraped onto the feed end instead of shoveled into a feed hopper. You can readily figure this saving—one man can readily scrape a ton of material onto a conveyor in one-fourth of the time it would require him to shovel it.

DUE to the "Scoop" on the feed end of the Scoop Conveyor, it is not necessary to construct a track hopper or pit to unload hopper bottom cars. This makes it possible to unload cars quickly at any point along the track. To unload a car, it is only necessary to push the scoop end under the hopper doors, open the doors and the material is carried away by the belt as fast as it flows through.

Write for catalogue No. 70

Portable Machinery Co., Inc.
Passaic, N. J.

Send the Clipping for New Catalogue

—A thirty-page book on boiler settings. True, it is about "Steel Mixture" boiler settings but you probably know about the usual small-brick settings and you certainly want to know about the modern method—everybody keeps in step with the times.

"STEEL MIXTURE"

is a large-block construction for the Front Lining, Fire Box, Combustion Chamber Arch, Blow-Off Pipe Covering and Furnace Arches.

IT IS CORRECTLY DESIGNED; Front Arch to permit easy and quick firing; Fire Box Linings to be air-tight and save coal; Back Arch to be strong and gas-tight, and leave work-room underneath.

IT SAVES MONEY on repairs and replacements; Gives continuous service and outwears at least two small-brick settings.

IT IS SHIPPED PROMPTLY from stock; Fitted up to the measurements of each individual setting. For all styles and sizes of boilers.

Send for this catalogue today.

McLEOD & HENRY CO.

TROY, N. Y.

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McLeod & Henry Co.
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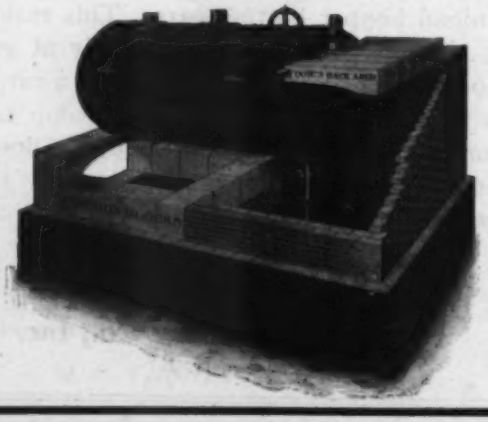
Gentlemen:—

Please send the new catalogue on "Steel Mixture" boiler settings.

Name .....

Address .....



Association of Wood Using Industries

Pursuant to resolution passed at a conference on Reforestation held at Madison, Wis., July 23, a meeting was held in Chicago on September 28 of representatives of twenty-four wood using industries, which resulted in the formation of an organization to be known as the Association of Wood Using Industries.

E. E. Parsonage, of the John Deere Company, officiated as chairman.

The several secretaries present outlined the necessity for having machinery established through which the wood using industries could clear matters of Reforestation, of Wood Conservation and Legislation Activities of common interest to all industries fabricating wood.

The meeting having decided that an organization which would function for the wood using industries was of vital importance, a committee was appointed to prepare a constitution and bylaws, which were later presented and unanimously adopted.

The following officers were duly elected: E. E. Parsonage (Implement and Vehicle), President; Hugh P. Baker (Paper and Pulp), Vice-President; Wm. B. Baker (Furniture), Secretary; F. A. Vogel (Miscellaneous), Treasurer; W. A. Babbitt (Wood Turners), John Foley (Wood Preservatives) and W. Harry Davis (Containers).

The office of the Secretary is 531 Monadnock Block, Chicago, Ill.

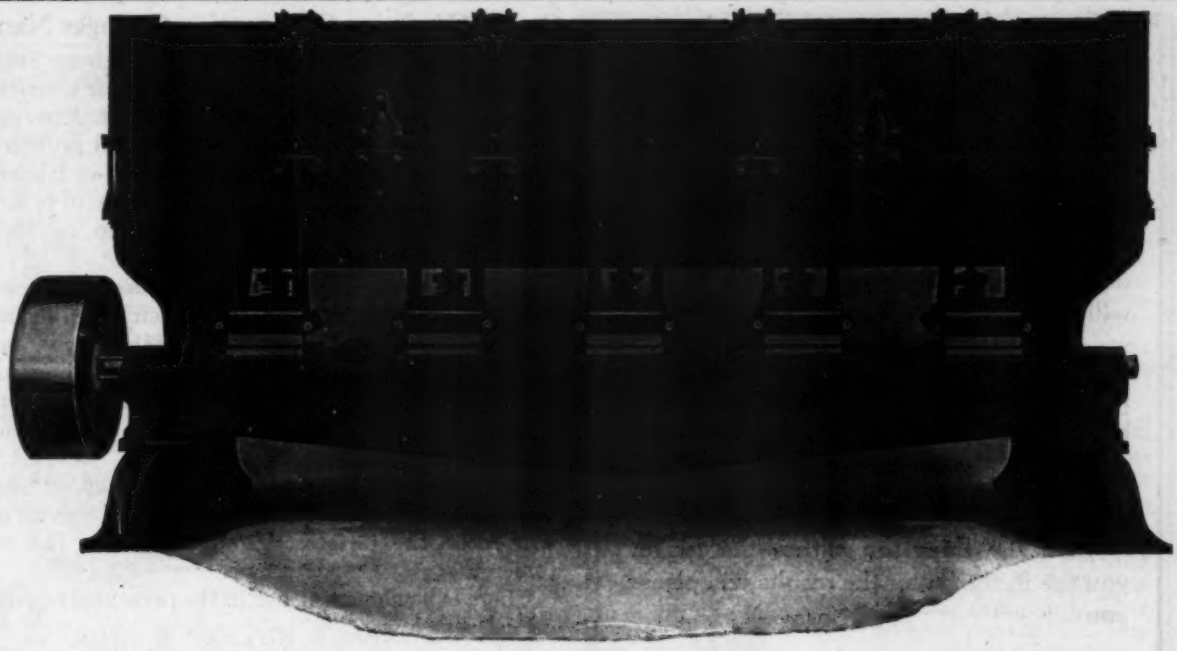
Board Mill Sold

The Gibbs-Bower Company, Paper and Pulp Mill Brokers, 261 Broadway, New York City, advise that they have sold the Bank Mill of the Robertson Paper Company at Montville, New London County, Conn., to the S. W. Board Company.

The Robertson Paper Company's mills are made up in three units known as the Montville, Rockland and Bank Mills. The mill which has just been sold has for sometime been making Oxo Brand Box Board and in fact the mill is equipped so that it can make practically all grades of board with slight alterations. The Robertson people were willing to dispose of the Bank Mill because of excess of board production from their other two mills which was sufficient to supply them with the necessary material for their box shop.

The Bank Mill is all stone construction and contains two 800-lb. and one 1,000-lb. Beaters and two Jordan Engines. The paper machine is a 76-inch four-cylinder, trimming a sheet 67 inches in width. Both steam and water power are available. The new owners are making many improvements and will continue to operate the mill on box board stock.

Parsons Trading Company, which has for some time been using "Ferncroft Bond, Made in U. S. A." as a brand has now put the name in as a watermark.



sneercShartle
tliuBrothers
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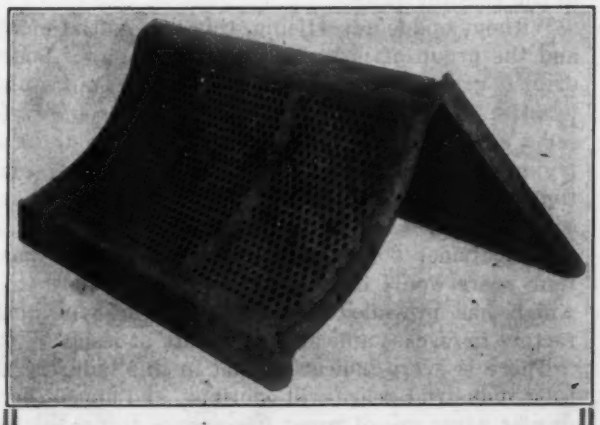
tcerroCompany



Because there are no moving parts this is a very simple but very efficient device. Patent No. 1,271,426 issued to Mr. Brownell Buehler, July 2nd, 1918.

The Shartle Continuous Beater Company
MIDDLETOWN, OHIO

JENSSEN ACID TOWERS
at Nekoosa Edwards Paper Co.
Port Edwards, Wisconsin

60 Jenssen Tower Installations

GREAT ECONOMY has been effected in mills where the

JENSSEN Two-Tower Acid Systems

has been installed

Sixty Installations now in operation or building

U. S. A., Canadian and European Patents

G. D. Jenssen Co.
200 Fifth Ave., New York

Satisfaction That Grows

Most any machine of passable construction, if reasonably well fitted to its job, will give a degree of satisfaction—at first.

But the real test comes later. There's nothing like long service for establishing beyond question whether a machine has or has not the ability to handle its work satisfactorily.

With the Langston slitter, the longer you use it, the better the results will please you.

In the beginning, you are certain to be satisfied with the way the Langston slitter turns out the work.

And this initial satisfaction mounts steadily as you see how the Langston slitter keeps on operating smoothly, continuously, day in, day out. You'll appreciate the way it has of stacking up the work—and the dollars, too.

Two generations of hard, every-day experience are built into the Langston slitter. We will be glad to show you, without your incurring the slightest obligation, how well this experience has adapted the Langston slitter to solve the problems you're up against.

SAMUEL M. LANGSTON CO.
CAMDEN, NEW JERSEY, U. S. A.

Langston—for Paper Working Machinery

Steam Conveyor Corporation Changes Name

Announcement is made by the American Steam Conveyor Corporation of a change in their corporate name to the "Conveyors Corporation of America."

The change in name is due to the rapid growth of the corporation, the addition of new lines of business and the purchase at South Bend, Indiana, of a large and completely equipped machine shop to which foundry facilities will be added.

The new name more nearly describes the present business of the organization. Their line includes steam jet conveyors for handling ashes, soot, combustion ash, etc.; trolley carriers for handling coal, limestone, sand, gravel and like loose bulky materials; ashpit doors; flood oil bearing sheaves and other conveyor supplies.

The acquisition of a new machine shop at South Bend, Indiana, will afford unusual prompt service and will meet the strictest requirements of the customers.

There is no change either in the personnel or policy of the company.

Increase in Weavers' Wage

At a joint meeting of the American Wire Weavers' Protective Association and the Paper Machine Wire Manufacturers' Industrial Council at the Hotel McAlpin, New York, on September 13th, a new wage scale was adopted, representing an increase of 15% in the existing rates.

Without undue advertising, this substantial union and the group of manufacturers who supply Fourdrinier wires to the paper trade have built up a practice of collective bargaining which could well serve as an example for other trades. Through the trying period of the war there has been no cessation of work, both parties having exhibited a most commendable spirit in their negotiations.

An outsider observing the meetings of the past four years would have marveled at the good spirit which has prevailed and the willingness of both factors to discuss amicably all points at issue.

There is every indication that in this industry at least industrial peace will continue, and since Fourdrinier wires are of great importance to production in the paper trade, this assurance should be comforting.

Trimbey and Allen, Glens Falls, New York, announce that they have consolidated their business with that of M. G. Tibbitts and that Mr. Tibbitts will hold the position in the new firm as salesmanager. They also announce that they have secured the services of H. D. Wells, formerly with the Glens Falls Machine Works to assist in selling and installing the Trimbey and Allen machines.

"It is cheaper to keep well than to get well," says the National Safety Council.

When it is a matter of

CHIPPER and BARKER KNIVES;
RAG CUTTER, ROTARY CUTTER
and PAPER TRIMMING KNIVES,
FLY BARS and BED PLATES
for BEATERS and WASHERS,
JORDAN ENGINE FILLINGS,

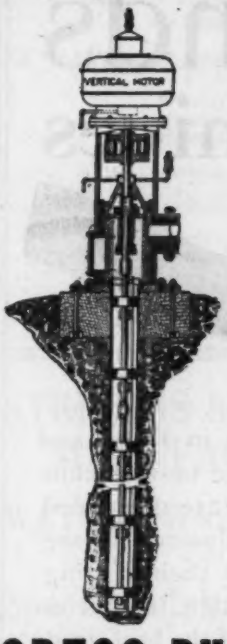
THINK OF

BOLTON QUALITY

JOHN W. BOLTON & SONS, Inc.
LAWRENCE, MASS.

Intensive specialists in the manufacture of uniformly high grade machine knives for the pulp, paper and board industry

Gregg Propellor Pump



This pump is especially well adapted for paper mill use where tubular wells are used for water supply.

WHY

This pump has great capacity and will deliver more water from tubular wells than any known pumping system.

When suction pumps and air lift systems fail to secure the water, try a GREGG Propellor Pump.

Many of the largest Industrial Plants, Packing Houses, Paper Mills and Railway Companies have adopted the GREGG Propellor Pump for their use.

THERE IS A REASON

Write for particulars

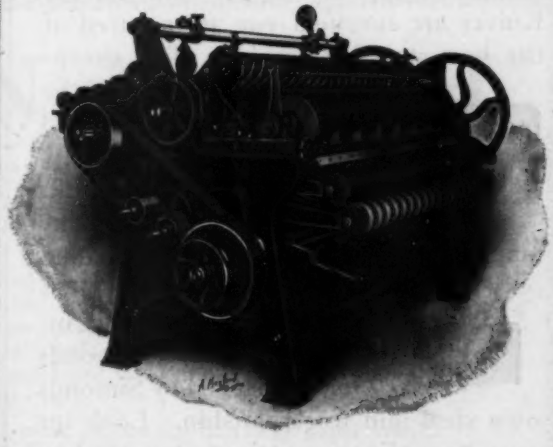
GREGG PUMP COMPANY
KANSAS CITY, MO.

Appleton

Felts and Jackets

Manufactured By

APPLETON WOOLEN MILLS
APPLETON, WIS.



PAPER CUTTERS

Single, Duplex, and Diagonal

CUTTER KNIVES
PATENT TOP SLITTERS

Hamblet Machine Co.
LAWRENCE, MASS.

Simonds Knives

For greater production in Paper and Pulp Mills the best machinery and implements are demanded. In the preparation of pulpwood strong, sturdy knives that hold their cutting-edge, and saws of the best grade are essential to this end.

If Simonds Chipper and Barker Knives are specified you are assured of the best possible service. The exceptional qualities of the Simonds Inserted Tooth Cut-Off Saw has long been familiar to mill men. The quality of these mill knives is equalled only by Simonds Paper Cutting Knives and Circular Paper Cutters. They are Simonds Quality backed by Simonds own steel and workmanship. Look for an extraordinary cutting service when you order Simonds Knives or Saws.

Simonds Manufacturing Co.

"The Saw Makers"

Fitchburg, Mass. **Chicago, Ill.**

5 *Factories* **12** *Branches*

Railroads Sawing Wood While the Talkers Talk

It is in a sense unfortunate for the railroads that this is a presidential year. In the fireworks and heat of the campaign political news naturally holds the center of the stage, and the public all but forgets there are such conveniences in the land as railroads. If it were not for the great amount of campaign news the papers right now would be full of accounts of the great strides the railroads are making in clearing up the freight congestion.

While the campaign goes noisily on, the railroads are quietly furnishing a brand of transportation that would have been considered impossible a few months ago.

At any rate, this is the opinion of L. H. Bean, Vice-President of Dwight P. Robinson & Co. (with which Westinghouse, Church, Kerr & Co. is consolidated), engineers and constructors who do business with fifty or more different railroads.

"People generally do not appreciate what an improvement the railroads have been making in their service," says Mr. Bean, "in spite of an estimated shortage of 324,000 freight cars, as a result of the war.

"Added to the car shortage is the great number of cars in bad condition. So serious has this shortage become that farmers have been warned that they might not be able to get their grain harvest to market.

"In the industrial field plants have had to limit their production even with their sidings filled with cars—some in such bad order as to be useless. Some private companies have even repaired cars on their sidings at their own expense rather than delay their shipments further. Others have placed orders with car builders for their own rolling stock.

"This serious situation has been steadily improved. The Interstate Commerce Commission has authorized increased demurrage and reconsignment charges to cut down non-productive time of cars; the Association of Railway Executives has set for its goal an average movement of not less than 30 miles a day for each freight car, and a reduction of the number of 'bad order' cars not to exceed 4 per cent of the total owned.

"As a result the railroads report moving 4,000 carloads more than in August, 1918, which was the record up to that time."

The revised edition of the Link-Belt catalog No. 380 is now off the press and available for distribution. This 96-page book covers the Link-Belt line of standardized monorail electric hoists as well as overhead electric traveling cranes in capacities of ½ to 3 tons inclusive. It completely describes these machines—giving tables of weights, clearance dimensions and speeds, and is copiously illustrated.

"Don't gamble with life," says the National Safety Council.

GEORGE F. HARDY

M. AM. SOC. C. E.
M. AM. SOC. M. E.
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Mill Architect and Consulting Engineer

Langdon Building

309 Broadway, New York

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Paper, Pulp and Fibre Mills
Water Power Development
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PAPER, PULP AND FIBRE MILLS INCLUDING BUILDINGS AND COMPLETE MECHANICAL EQUIPMENT
WATER POWER DEVELOPMENT
DAMS, STORAGE RESERVOIRS AND OTHER HYDRAULIC STRUCTURES
STEAM PLANTS

Examinations
Reports
Estimates of Cost
Designs
Specifications
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JOHN F. CARRIGAN

Industrial Power Engineering

Cunard Building, Chicago

ESTIMATES REPORTS DETAIL PLANS
Construction of New and Remodeling Old Plants
MODERN STEAM INSTALLATIONS
Electrifying and Motorizing Complete Plants

Manufacturers of Carrigan Hand Stokers

STEBBINS ENGINEERING & MANUFACTURING CO.

WATERTOWN, - NEW YORK

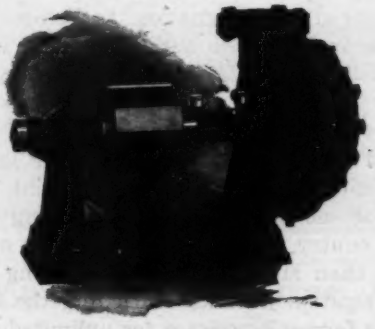
Special Sulphite Mill Equipping

Agents for the Heiskanen Pulp Bleaching Apparatus.

AMERICAN-MARSH

Centrifugal Pumps

BELT OR MOTOR DRIVEN



Extra wide ring oiled bearings. Overhanging casing allowing the discharge to be taken at any angle desired. Removable outer head so that impeller may be withdrawn without disturbing the casing. Hydraulically balanced impeller insuring minimum end thrust. Impeller machined all over and turned to make a close running fit with the casing.

Finished with open runner for handling paper stock.

INVESTIGATE. *ASK FOR BULLETIN No. 25.*
Furnished Promptly Upon Request.

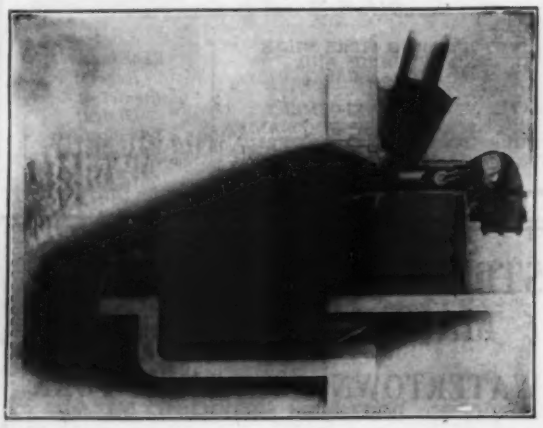
We Also Manufacture Power Pumps, Deep Well Pumps, Boiler Feed Pumps, Vacuum Pumps, Horizontal Power Air Compressors.

American Steam Pump Co.

Battle Creek, Michigan

Chicago Office, 1220 Monadnock Block.
New York Office, Whitehall Building, 17 Battery Place.

Burn All Grades of Coal



Cross-section through stoker, showing automatic operation

No device has shown itself better adapted to burn any available coal than the

RILEY UNDERFEED STOKERS

Low grade coals—those high in ash—in sulphur and clinker-forming qualities—can be handled successfully for the following reasons:

1. The MOVING GRATES keep the clinkers broken up—combustion is intensified—the fuel bed is always active, even and in a homogeneous state.

2. The ROCKER DUMP, with its combination of vertical thrust and rocking motion, grinds up—discharges the ash continuously and automatically—keeps the fire clean and the bridge wall free from accumulations.

3. The UNDERFEED feature makes possible high capacity and instant response to overload demands.

Our engineers will be glad to acquaint you with the wide range of fuels NOW being handled by the Riley Underfeed Stoker under many varying conditions.

Write for Catalog D-10

Sanford Riley Stoker Co.
Worcester, Mass.

Boston New York Philadelphia Pittsburgh Buffalo
Cleveland Detroit Cincinnati Chicago St. Paul Denver

The Godfrey Conveyor Company, Elkhart, Ind., has just issued an interesting booklet on conveying systems for handling coal, ashes, etc., as well as baled materials, such as paper pulp, straw, etc., and is filled with interesting information on this subject. A number of these installations have been made for paper manufacturing companies. A copy may be had for the asking.

"Buffalo Standard Heaters" is the title of a new catalog just issued by the Buffalo Forge Company, Buffalo, N. Y. This book has been prepared with the view of making it useful to architects and engineers in figuring the heating requirements for fan, heating and ventilating work. This book has considerable value to engineers and millwrights in paper mills, and these men should have a copy, which the company will be pleased to send.

The Link-Belt Company, 910 S. Michigan avenue, Chicago, Ill., recently published an illustrated and very attractive 24-page book covering their Traveling Water Screens. This publication will be sent to anyone interested in the effective and economical screening of condensing water.

Surface condensers are easily clogged up by trash contained in the water supply, and very hard to clean. Clogged condenser tubes mean reduced efficiency of operation, and other disadvantages that can be forestalled by the use of traveling screens. This interesting subject is covered fully.

After 21 years in the service of the sales organization of the American Writing Paper Company, during the major portion of which time he has acted as manager of the New York sales office, L. F. Hayward has announced his resignation, to become effective in the near future, to affiliate himself with the personnel of the Royal Card and Paper Company of New York. In his new capacity, Mr. Hayward will have supervision of the sales department of the Royal Card and Paper Company and will be in an advisory capacity as to purchases, management, etc. There is probably no man in the paper selling fraternity of the country who is better known or more generally liked than Mr. Hayward. In leaving the American organization he takes with him the best wishes of all his former associates for unlimited success in his new field.

The R. H. Beaumont Company of 319 Arch St., Phila., contractors for conveying and hoisting systems and complete power plants, have recently opened a Pittsburgh, Pa., office at 230 Fifth Avenue. Mr. Thomas Widdop is in charge.

"Production depends on material, methods and men—especially SAFE MEN," says the National Safety Council.

The "Hamilton" Felt

Our Cylinder Wet Felts for 9 points straw and for roofing are *open* in texture, *do not* stretch and *are durable.* A trial is invited.

SHULER & BENNINGHOFEN
HAMILTON, OHIO

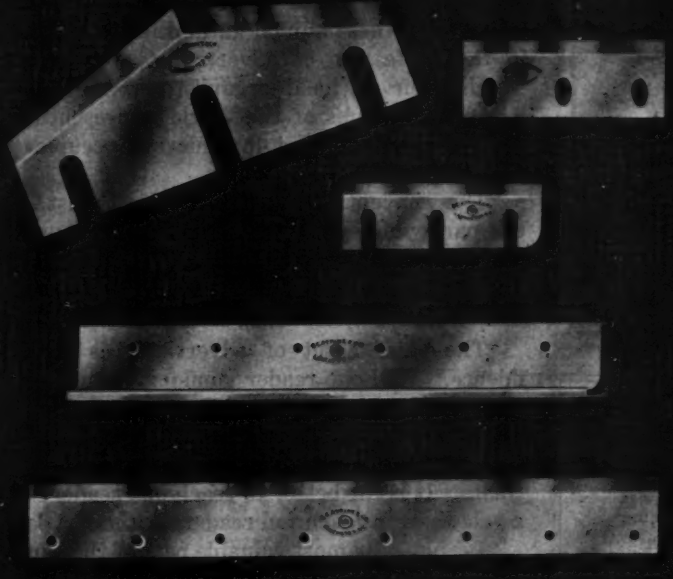
FRANK F. ALT
LA FAYETTE, INDIANA

Converter of Paper Mill Felts into finished Bed Blankets and Auto Robes at the nominal charge of $1.50 per blanket or robe, except press felts, which are $1.75 per blanket or robe.

We cut, wash, renap, bind and pack for reshipment at the above prices in the natural color of felt, and in any quantity for mills or individuals. For dyeing any other color we charge 40 cents per pound extra. dry weight after material is washed.

Special Price for Quantity.

Ship your felts express, freight or parcel post, prepaid to
421 Columbia Street, La Fayette, Ind.



The Demand for Maximum Production

is answered by the superior performance of

Atkins Silver Steel
Barkers, Chippers, Cutters and Planers.

Their excellent material, temper and workmanship assures you of knife satisfaction and we solicit a trial for them.

Write for our Machine Knife Booklet.

E. C. ATKINS & COMPANY, Inc.
Home Office and Factory: INDIANAPOLIS, IND. *Machine Knife Factory:* LANCASTER, N. Y.

Waterproof Case Lining

Protects your Shipments from damage by moisture while in storage or transit

NATIONAL DUPLEX
TRADE MARK

We can supply National Duplex Waterproof Case Lining in either rolls or sheets

WE ALSO MAKE WAX PAPERS, ALL WEIGHTS, IN SHEETS OR ROLLS

Write for Samples

National Waterproofing Co. Drexel Bldg. **Philadelphia, Pa.**

Models E & F

Cold Pipe Bending Machines

Standard of the world.

Bends all sizes of pipe from ⅛ in. to 8 in.
Hand or motor operated.

Send for catalog.

American Pipe Bending Machine Co.
12 Pearl Street, BOSTON, MASS.

The CHICAGO
Approved Portable
WATCHMAN'S
CLOCK

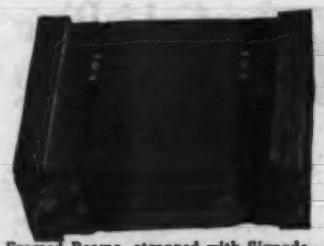
with its special Waltham movement, its lock stations and its superior quality throughout, is especially desirable for mills and factories and for either in-door or out-door patrol.

Write for booklet.

CHICAGO WATCHMAN'S CLOCK WORKS
9 Church Street, NEW YORK
1938 South Wabash Avenue, CHICAGO

Lockport Felt Company
NEWFANE, NEW YORK
MAKERS OF
Fine Felts for Fine Papers
ALSO MAKERS OF
Best Felts for *all* Papers
SATISFACTION GUARANTEED

Do You Know That
Claflin Continuous Beaters
Have 3½ times the efficiency of other beaters in use today for Beating, Brushing and Refining Paper Stock?
For Increased Production, Greater Economy, Stronger, Finer, More Uniform Pulp, the CLAFLIN CONTINUOUS BEATERS will more than satisfy.
Ask Us for Our New Catalogue
THE CLAFLIN ENGINEERING COMPANY
LANCASTER, OHIO
The Canadian Fairbanks-Morse Company, Limited Agents for Dominion of Canada.

SIGNODE SYSTEM

Framed Reams, strapped with Signode System
Signode straps insure delivery of framed paper bundles in the same condition they leave the mill. Cheaper than rope. No battered corners. Liberal trial arrangement.
Write for Particulars and Prices
The Signode System, Inc.
564 W. Adams Street CHICAGO, ILL.

The Truth in Advertising

N an address before the Associated Advertising Clubs of the World at Indianapolis recently, Mr. Richard H. Lee brought out some very pertinent points as to the value of advertising and the great value that advertising is to business in general.

The three most interesting points that he brought out were that the reader had the right to believe advertising, that the advertiser had a right to have his advertising believed, and that the periodical that knowingly prints advertising of an untruthful nature is guilty of fraud along with the advertiser who purchased the space. He said in part:

"When we reflect that there are but two branches of industry—production and marketing, and realize the part which advertising plays in the problem of marketing, we begin to get some idea of the importance of these annual gatherings of men engaged in the profession of advertising, and the position which their national organization, the Associated Advertising Clubs of the World, representing every branch of advertising in America, occupies in the business world.

"The convention, just beginning, must consider the part which advertising plays in the problem of advertising are the problems of the business world, and the world's problems today are of a size never before approached in the world's history.

"The chief asset of advertising is reader confidence. Without reader confidence there would be no such thing as advertising. Reader confidence means returns to the advertiser. Circulation with reader confidence is an asset. Without it, it is a waste. It is far better to reach one reader and make a sale than to reach ten readers without a sale.

"Perhaps the most valuable part of the work which the National Vigilance Committee has done lies in the discovery that business is honest. The misusers of advertising before our work began were so glaring, so outstanding, that it was the common belief that most advertising was untrustworthy. If our work had done nothing other than to reveal the fact that advertising in the main is trustworthy, it would justify the work we have done. We discovered that it was the noise made by the misusers of advertising which had led us to believe that it was being generally misused, and we have found that in numbers the misusers of advertising are comparatively small; that business is not only honest, but that it is exceedingly jealous of its standing with the public.

"That is why it is always to the advantage of the purchaser to buy an advertised product. A business man with half a vision, spending money in advertising to induce the public to buy his product, is not going to jeopardize the investment he has made in that advertising by permitting the customer to be dissatisfied."

The Paper Industry has always believed that it

HILL COLLAR OILING BEARINGS

The most efficient self oiling bearing on the market.

Oil stored in a reservoir in the bottom of the bearing is continuously elevated by a heavy split collar. Metal wipers deflect the oil, which is then distributed along the full length of the journal. Thus the shaft operates on a continuous unbroken film of oil.

The oil collar also acts as a thrust collar and no outside collars are required.

Furnished in all styles of mountings with provisions for both vertical and lateral adjustment.

Send for Catalog

THE HILL CLUTCH CO.
CLEVELAND, OHIO
New York Office, 50 Church Street

When buying a pump it is well worth your time to make a careful selection and carefully compare the various features to be considered in choosing the proper pump for the service to be performed. We would like to be of assistance in advising the purchaser the vital points which we consider of importance in making a selection and feel our fifty years' practical experience should be of some value.

Send for Catalogue 127

DEAN BROS. STEAM PUMP WORKS. INDIANAPOLIS.

The DAVIS Regulator *for* Paper Mills

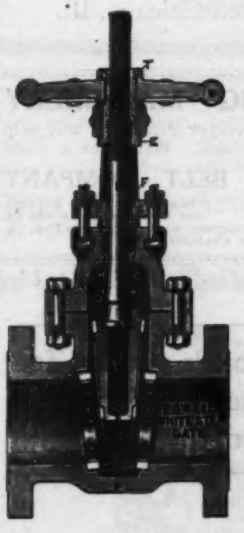
reduce initial steam, water, air or oil pressures of as high as 200 lbs. to any desired delivery pressure. Used universally with great success. This regulator used successfully by Paper Mills everywhere. Install Davis Specialties in your mill and get reliability of service and save steam—which means coal

G. M. DAVIS REGULATOR COMPANY
414 Milwaukee Avenue, Chicago

DAVIS VALVE
STEAM SAVERS SINCE 1875
SPECIALTIES

POWELL VALVES

For Pulp and Paper Mills



Powell "White Star" Gate Valves

For Steam, Water, Gas, Oil, Air or Chemicals, — To Meet Every Requirement.

Gate valves with rising or non-rising spindles. Screwed or flanged ends—of brass, iron or steel.

Ask your dealer for "Powell" Valves—or write us.

THE WM POWELL CO.
DEPENDABLE ENGINEERING SPECIALTIES
CINCINNATI, O.

was the part of a real trade journal to see that no advertising went into its columns that was untruthful or reflected on competitors; in fact part of our contract states that "We reserve the right to edit or reject copy if deemed untruthful in statement or unfair to other advertisers." We know it has been the practice of many publications, and still is the practice of some of them, to accept advertising on most any basis in order to make a showing, but this is not profitable business to the publisher, nor is it profitable to the readers of the journal, and we are glad indeed to see that the tendency of the times is to eliminate this plan, which was in vogue to such an extent some years ago.

T. A. P. P. I.'s Expansion

The office of the Technical Association of the Pulp and Paper Industry has been moved from 18 East Forty-first street to 542 Fifth avenue; telephone Vanderbilt 5575. An expansion of the association's activities is planned, it being contemplated to secure additional room to provide accommodations for minor laboratory work which will include microscopical, chemical and physical testing of paper and fibers. In addition to this accommodations will be obtained for the filing of trade and technical journals and index records.

Elections to membership in T. A. P. P. I. during the first week of October comprise two active, one associate, one corporate and four juniors.

The John F. Byers Machine Company, Ravanna, Ohio, has under construction at the present time a new erecting shop, which when completed will allow the increased production which is needed for the manufacture of their Auto-Crane in quantities to meet the pressing demands for this popular machine.

R. D. W. Ewing has been appointed manager of the American Writing Paper Company's New York office at 41 Park Row, succeeding L. F. Hayward, resigned. Mr. Ewing, who has been manager of the company's Bonds, Writings and Ledgers Section at the Holyoke office, will assume his new duties on October 15. His experience, his executive ability and his knowledge of the paper trade eminently fit him for the important position.

The R. T. Vanderbilt Company, 50 East 42d street, New York, wishes to announce the association with their firm of R. W. Howell as one of its Vice-Presidents, effective October 1. He will have charge of all of their paper mill business, covering white clays and other products. The company has recently purchased the mine of the Peerless Clay Company at Langley, S. C., and have doubled the output during the past two months. They are also operating paper clay mines in Virginia and Georgia.

G. B. Davies, of Munising, Mich., has been named superintendent of the sulphite mill of the Northern Paper Mills, of Green Bay, Wis. He succeeds D. F. O'Connel, who recently resigned to become general manager of the new Peshtigo Fiber company mill at Peshtigo. Mr. O'Connel was superintendent of the mill at Green Bay for many years, and was well and favorably known throughout the state.

The Charles H. Prime Company, Inc., distributors of box boards with offices in the Flatiron Building, New York, has increased its capital from $50,000 to $100,000.

Shade trees may be destroyed by leaky gas mains, which poison the roots, making it impossible for the tree to secure nourishment from the ground. Gas killed trees are often thought to have been killed by insects, and weakened trees are often completely killed by borers or by fungi.

If you manufacture a product used extensively in the paper industry, and which could be sold to advantage in the State of Ohio,
Address Box 21,
The Paper Industry.

James L. Carey
Paper Mill Architect and Engineer
208 N. Laramie Ave., Chicago, Ill.

ROBINS CONVEYING MACHINERY
The "Robins Hand Book of Conveyor Practice" will help you solve your conveying problems. Write for a copy.
ROBINS CONVEYING BELT COMPANY
New York, 11-21 Park Row. Chicago, Old Colony Buildings.
Pittsburgh, Union Arcade Bldg. San Francisco, The Griffin Co.
Toronto, Gutta Percha & Rubber, Ltd. Birmingham, Ala., C. B. Davis Eng. Co.
London, E. C., Fraser & Chalmers, Ltd.

Don't blame the back tender for slipped rolls. Use a collapsible shaft that will hold them up.

Nekoosa Motor & Machine Co.
NEKOOSA, WISCONSIN

STANDARD BLEACHING POWDER

Manufactured by

Pennsylvania Salt M'f'g Co.
PHILADELPHIA, PA.

RUSS GELATIN CO.

Factory—WESTFIELD, MASS.

MANUFACTURERS OF

GELATIN and GLUE

ANIMAL SIZING GLUE STOCK

LARGEST SPECIALISTS IN AMERICA ON

FINE WRITING PAPER SIZING

E. F. RUSS COMPANY 201 Devonshire S BOSTON, U. S. A.

BOILERS

Surplus stock taken over from the Du Pont Chemical Co. and other plants.

PRACTICALLY NEW

Used Six Months to Three Years
Offered Subject to Any Inspection

No.	Size, Hp.	Make	Pressure, Lb.
9	600	Edge Moor (Ohio Standard)	200
13	600	Edge Moor	200
20	600	Edge Moor	160
1	813	Edge Moor (A. S. M. E.)	200
Above located in du Pont Chemical Company's Plant at Hopewell, Virginia			
2	395	B. & W. (Stirling) located Carney's Point, N. J.	200
5	253	Stirling Class E No. 22	160
2	264	B. & W.	160
10	512	Stirling Class S No. 26	160
2	512	Stirling Class S No. 26	160
1	823	Stirling M-30 (A. S. M. E.)	200
2	550	Edge Moor	150
2	238	Edge Moor	150
1	231	Edge Moor (Ohio Standard)	150
1	199	Edge Moor	150
1	100	Smith HRT	100
1	50	Ames Locomotive	100
Above boilers located at du Pont Chemical Company's Plant, Carney's Point, N. J.			

MISCELLANEOUS

No.	Size, Hp.	Make	Pressure, Lb.
1	400	Stirling	150
2	400	Wickes	150
2	250	Wickes	165
2	250	Wickes	150
1	300	Wickes	150
1	225	Geary	150
1	250	B. & W.	125
2	210	B. & W.	125
1	125	Scotch Marine	125
1	78 x 20	H.R.T.	135
8	72 x 18	H.R.T.	125
2	84 x 18	H.R.T.	100
2	66 x 16	H.R.T.	125
2	66 x 16	H.R.T.	80
1	500	B. & W. Steel header	180

STEEL STACKS

3—39 in. x 75 ft. 1—60 in. x 92 ft. 6—36 in. x 60 ft.
1—14 x 36 R. H. Corliss Engine.

We invite your inspection of any of the equipment we have in stock. Inspections can be made at any time. Quotations are made for prompt acceptance and subject to prior sale.

Let us handle your boiler requirements. We overcome high prices and slow deliveries on new boilers. Purchase now and take advantage of this stock which is moving rapidly.

Write or Wire Sales Dept. for specifications and quotations also when you have boilers for sale.

J. F. DAVIS Phone Central 1494, 1122-24 Harris Trust Building, Chicago

Paper Mill Lubrication Raised to the Highest Degree of Efficiency

In order to "make good" day after day in paper manufacturing a lubricant must be able to "stand up" under excessive bearing pressure and resist the heat transmitted by steam as well.

Extensive use of Keystone Grease in large paper mills throughout the country conclusively proves it to be unparalleled for the lubrication of both calender and finishing rolls of any character, particularly where unusual heat conditions exist.

KEYSTONE GREASE

Write today for our free Bulletin Number 23.

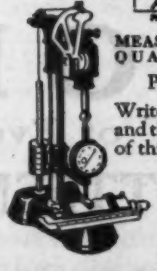
The Keystone Lubricating Co.

Executive Office and Works:
Philadelphia, Pa.
Established 1884

New York Boston Pittsburgh Chicago St. Louis Denver San Francisco Minneapolis Houston

WWWWWWWWWWWWWWW

WIDNEY MODULIMETER A TEST



MEASURES EVERY PHYSICAL QUALITY IN MATERIAL

Paper, Felt, Rubber, Etc.

Write for our booklet—just out—and the story of the development of this universal testing device.

WIDNEY TEST LABORATORIES
Physical Tests and Research
352 S. Jefferson St. Chicago

WWWWWWWWWWWWWWW

THE WORLD'S BEST FILLER

ASBESTINE PULP

(Reg. U. S. Pat. Office)

Finest White Color **Natural Fiber** **Retention 90%**

Every Way Superior to Clay

Prompt Shipments Guaranteed—Largest Mills in the World

INTERNATIONAL PULP CO., 41 Park Row, New York

A. SALOMON, Inc.

EMANUEL SALOMON, President

15 Park Row *New York*

Paper Makers Supplies

SOLE AGENTS U. S. *and* CANADA *for*

GASTON CAHEN & CO. *Ghent, Belgium*

J. ROZES AINE *Agen, France*

JEAN SOULIER *Rouen, France*

LEON MOIRAND *Annonay, France*

PAPER MAKERS'

Alum

(BOTH COMMERCIAL and FREE FROM IRON)

Casein, Satin White, English China Clay, Crystal Boro Phosphate

The

Kalbfleisch Corporation

31 Union Square West NEW YORK, N. Y.

ESTABLISHED 1892

Vito G. Cantasano & Bros.

PACKERS AND WHOLESALE DEALERS

PAPER STOCK, COTTON AND WOOLEN RAGS.

399 PEARL STREET 34 VANDEWATER ST

OFFICE: 185 SOUTH STREET

383 WATER STREET 5-7-9 JAMES SLIP

NEW YORK

Bleached and Unbleached

WOOD PULP

of Every Description

M. GOTTESMAN & COMPANY

INCORPORATED

18 East 41st Street **NEW YORK, N. Y.**

Established 1888

Demand for practically every kind of paper has diminished to quite an extent. Buyers who not so long ago were making urgent appeals to mills and jobbers for supplies are now keeping very much out of sight. Publishers and printers who for a lengthy period were continuously in the market absorbing all the paper found available are today limiting their buying to a noticeable degree. The situation, in fact, has quieted to a point where there is less trade activity than probably at any time since the ending of the war.

The prevailing condition of the market, when the various factors contributing to the cause are considered, it is nothing more than to be expected. Business in all merchandising lines is dull; a direct result of the slashing of prices on numerous commodities that has been going on for the past few weeks. Consumers of virtually every kind of manufactured article, hearing and reading on all sides of a so-called inevitable readjustment of prices, and witnessing manufacturers of many commodities reduce prices, naturally are holding off in buying. This policy starts with the individual and broadens out until it can be said that the country at large is refraining from purchasing every article that can be dispensed with for a time. Manufacturers are in turn limiting their buying of raw material, and so on all down the line buying is at as near a standstill as it is possible for it to be without bringing the wheels of commerce to a dead halt.

It is no surprise that the paper market is feeling the effects of such a situation. Paper manufacturers can be gratified that theirs was one of the last commodities to become involved in the slowing-up movement. It is proverbial that the paper trade is dependent directly on activity in other lines, for the reason that brisk business in other industries makes for a large consumption of paper of one kind or another. With retail and wholesale business in virtually all varieties of merchandise at a very low ebb, it is but logical that demand for paper should decrease.

Thus far, paper mills have not been seriously concerned with the quiet state of affairs in the market. Most papermaking plants in various parts of the country are so well booked up that the break in demand has not bothered them as regards present operations. Few mills are receiving cancellations to amount to anything. Some consumers, of course, are withdrawing orders, but most of them are not going so far as to cancel orders they have placed with manufacturers, for the average user of paper has learned during the past year to look ahead in respect to supplies and there are consequently few buyers who are willing to leave their potential wants for the forthcoming several months uncovered to the point of not having orders on file with mills. Neither have prices been affected to any important extent. Some grades of paper have eased off in value somewhat, but there has been no severe drop in prices, nor does it seem likely there will be. Manufacturers realize that a lowering of prices at this time would bring them little or no additional business, because the consumer of paper is in that frame of mind where cheaper prices would not attract him into placing orders unless the need for supplies is imperative, in which case he would buy regardless of the cost. Moreover, there is a confident feeling throughout the trade that the market will tighten up again within the next month or so. After the national election, it is expected business in general will improve, and paper trade men look for buyers to flock into the market all at once to augment their stocks. There is little surplus supply of paper of any grade in the market, which statement is attested to by the maintenance of prices in the face of the slack demand lately, and a revival of buying activity would doubtless be creative of a further rise in prices. Manufacturing costs have not decreased; on the contrary, it costs more to produce paper today than at any time during the period of abnormal manufacturing costs in the past several years. Nor is there any indication of raw materials becoming cheaper or of wages declining.

Factors lending a bullish tone to the outlook are manifold. Chief of them are that mills the country over are foresold for at least two months, in view of which it seems unlikely that any sharp reduction in market prices will occur for at least that period. There may be some slight recession, but the probabilities would certainly seem that paper values are destined to stay at close to prevailing levels for quite a time yet.

From far off India a student with a college degree has come to Syracuse to study paper making in the New York State College of Forestry. N. H. Samuels is his name, and he is a native of India, educated in an English college, and now seeking technical training as one of the first students in the new course to train men for the paper industry.

A Chinese trust controls the dye used on firecrackers, made from cibucao, a Philippine wood. The same dye is used for sealing wax and Chinese ink.

COTTON LINTERS

Raw and Bleached

UNIFORM SHIPMENTS

Write or Wire for Samples and Quotations

Dallas Waste Mills

130 Pearl Street, New York

Main Office Dallas, Texas

Chicago Office 64 W. Randolph St.

PULP PULP PULP

KRAFT

SULPHITE

Bleached and Unbleached
Foreign and Domestic

CORRESPONDENCE SOLICITED

Scandinavian-American Trading Company

50 East 42nd Street New York

Telephones, Murray Hill 8311-12-13

Craig-Becker Co.

Incorporated

52 Vanderbilt Avenue

NEW YORK CITY

Bleached Easy Bleaching Unbleached Sulphites

Spruce and Poplar Ground Wood Pulp

Domestic *Export*

Have You Tried Cotton Linters for Paper Stock?

It Will Pay You to Figure With Us

Our organization covers the South

Steele By-Products Co., Inc.

DEALERS IN

Cotton—Linters—Waste

GENERAL OFFICES AND WAREHOUSES

BIRMINGHAM, ALABAMA

305-6 Slaughter Bldg. DALLAS, TEX.

1013 Hearst Bldg., CHICAGO, ILL.

Papermaking Rags

Current demand for papermaking rags is rather slack. Consuming mills are buying in limited fashion, most of them having fair-sized stocks on hand, and coming into the market only at spasmodic intervals as their requirements necessitate. Prices on old rags have eased off to some extent, but those on new cuttings rule firm and display a tendency to advance. There seems no doubting that new rags are scarce; that is, in comparison with the supplies usually available and with the volume of old rags now in the market. The reason for this is not so much the buying of paper mills and other consumers as the short production of cotton cuttings in recent months. Clothing houses the country over have been either working on part time schedule or else closed down entirely, so that less piece goods has been cut than normally and fewer rags produced. On the other hand, available supplies of old rags are ample to fill the wants of buyers, and there is proportionately as easy an undertone in evidence in this division of the market as there is firmness in the new rag branch.

New white shirt cuttings of No. 1 quality are priced at 26 cents and higher at shipping points, and are in good demand not only by paper mills but also by other users. Fancy shirt cuttings are quotable at 14.50 cents, new unbleached muslins at 19 cents, white lawns at 22 cents and No. 1 washables at 12.50 cents. Old white rags are in moderate call at slightly lower prices than ruled up to a short time ago, No. 1 repacked whites bringing around 15 cents per pound. Old thirds and blues are largely neglected and are offered at 4.75 cents for repacked at 4 cents for rough packing. Roofing rags have sagged further in value and are now moving to felt mills at 2 cents a pound at shipping points. There is apparently nothing in the rag outlook to cause paper manufacturers apprehension. Stocks of some grades are limited, but, generally speaking, available supplies appear ample to cover probable requirements, while should the domestic supply fall short of consumers' wants, additional supplies can be readily acquired in European countries provided buyers are willing to pay slight advances in prices. Quotations f. o. b. shipping points are:

New Stock—	New York and Chicago
White shirt cuttings, No. 1	26.00-27.00
White shirt cuttings, No. 2	15.00-16.00
Fancy shirt cuttings	14.50-15.00
Washables, No. 1	12.50-13.00
Unbleached muslins	19.00-20.00
White lawns	22.00-23.00
Overall cuttings, blue	13.00-13.50
Black silesias	7.50- 8.00
Old Stock—	
Whites, No. 1 repacked	14.00-15.00
White, No. 2 repacked	7.50- 8.00
Whites, house soiled	4.50- 4.75
Whites, street soiled	4.25- 4.50
Thirds and blues, repacked	4.50- 4.75
Thirds and blues, rough	3.75- 4.00
Black stockings	4.20- 4.40
Lace curtains	9.00- 9.25
Cotton canvas, No. 1	5.50- 6.00
White cotton batting	4.00- 4.25
Roofing, No. 1	2.00- 2.10
Roofing, No. 2	1.90- 2.00

Rope and Bagging

Extreme dullness characterizes the market for old bagging. Consumers are almost entirely neglecting this commodity, and dealers report that their offerings to mills are seldom accepted regardless of the prices asked. The inactivity appears due to mills being stocked up and to their refusal to anticipate future wants. Papermakers in need of bagging are enabled to buy at very close to their own figures. No. 1 scrap bagging is readily available at 2.50 cents a pound at shipping points, while roofing bagging is offered at 1.50 cents and less and No. 1 gunny at 3 cents. Old ropes are in moderate demand and are moving in fairly consistent volume. Quotations are at a basis of 6.25 cents for domestic manila rope of No. 1 grade. Prices follow:

	New York and Chicago
Gunny, No. 1 domestic	2.75-3.00
Gunny, No. 1 foreign	2.75-3.00
Scrap bagging, No. 1	2.40-2.60
Roofing bagging	1.40-1.60
Wool tares, heavy	3.00-3.25
Wool tares, light	2.85-3.00
Manila rope, No. 1 foreign	6.00-6.25
Manila rope, No. 1 domestic	6.00-6.25
Sisal strings	3.40-3.60
Mixed strings	3.00-3.25

Old Papers

After ruling strong for a lengthy period, the market for old paper recently developed the same downward trend current in other kinds of papermaking material. Sharp declines in values have occurred on some grades, notably low qualities used by box board

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Manufacturers
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PAPER
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Importers
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448-50 Pearl Street NEW YORK CITY

PAPER MILLS

WE have a selling capacity twice our supply, and are in the market for paper in large volume, and would like to hear from you.

Our competent selling organization has from the beginning always demanded an ever increasing supply. We are at present all sold up and looking around for more, and are now in the market for five thousand tons in several grades.

We would be glad to hear from you what tonnage you can give us during this year. Write us.

Interstate Pulp & Paper Co., Inc.
Grand Central Terminal, New York City

BATHURST LUMBER COMPANY, LIMITED

PRICE & PIERCE, LTD.
30 East 42nd Street, NEW YORK CITY

ARE NOW THE

SOLE SELLING AGENTS
for Bathurst Pulp

Unbleached Sulphite 50 tons daily
Kraft Pulp 50 tons daily

Our pulp is made from Canadian Spruce
We ship in sheets, baled

BATHURST, NEW BRUNSWICK, CANADA

Largest producers in the world of highest grade Brimstone —guaranteed 99% pure—free of Arsenic and Selenium.

The
UNION SULPHUR COMPANY

In so far as possible we will be glad to offer advice or suggestions to prospective buyers who are using or may be contemplating the use of brimstone.

17 BATTERY PLACE
NEW YORK

mills, and others have gradually eased off until they are substantially under the high level reached not so long ago. The reason for the weakening of the market is the retirement of most consumers as buyers. With larger supplies of wood pulp of at least some descriptions available, papermakers have been enabled to let up in their purchases of waste paper and prices suffered as a result.

Folded newspapers are quoted at 2.15 cents at shipping points and No. 1 mixed papers at 1.80 cents, both of these prices representing marked declines from the high peak reached by the market. Overissue newspapers are down to 2.40 cents for No. 1 grade, while heavy book stock is available at a recession to 3 cents. Shavings are firm and there are no signs of any impending easing of prices. No. 1 hard white shavings are quoted at 9.50 cents per pound at shipping points and soft whites of No. 1 quality at 8.50 cents. Kraft paper is a bit lower, as are white news cuttings and manilas. Prices f. o. b. shipping points range as follows:

	New York and Chicago
Hard white shavings, No. 1	9.25-9.50
Hard white shavings, No. 2-3	7.50-8.00
Soft white shavings	8.25-8.50
Colored shavings	5.00-5.50
Heavy book, No. 1	3.00-3.25
Crumpled, No. 1	2.75-3.00
Ledger stock	4.00-4.25
Kraft, No. 1	5.60-5.80
Manilas, No. 1	3.00-3.25
White blank news	6.00-6.25
Overissue news, No. 1	2.40-2.50
Folded news	2.15-2.25
Mill wrappers	2.25-2.35
Box board cuttings	1.90-2.00
Mixed paper, No. 1	1.75-1.85
Common paper	1.40-1.50

Chemical Pulp

Demand for chemical pulp is not near as urgent and prices on most grades have eased off slightly. The change in the market's complexion has been wrought more by the holding off of consumers in buying than by any other single factor, and the narrower demand apparently is due not to papermakers having less want for supplies, but because, as a result of the general downward tendency of prices on all commodities, they have purposely refrained from buying to as large an extent as their immediate requirements have permitted. Aside from some extra shipments of pulp from European sources, the market appears just as short on supplies as previously. Domestic producers are shipping out their pulp, mainly to contract customers, about as quickly as it becomes available, and the consumption shows no signs of having decreased. Nevertheless, buyers have held off in covering forward requirements, and current demand lacks that snap that was such an outstanding feature for a long time.

Washed Clay

¶ Are you receiving all the Clay you need and the grade that you want? Or are you accepting any old grade just so long as you can get delivery.

¶ Our customers are receiving the same grade as usual and we are not seriously embarrassed by shortage.

¶ We are in a position to give this same Service to you.

Because—

QUANTITY: Largest production in United States.

QUALITY: Lowest grit and moisture contents of any clay, domestic or foreign.

DELIVERIES: Reserve stock always on hand.

PLANTS: Three huge plants at McIntyre, Ga., under direct control of Edgar Bros. Co., also Saylorsburg, Pa., and Gordon, Ga.

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Paper Stock

Relieving the Shortage of Raw Materials

Out of the forty different kinds of paper stock graded in our many large warehouses, you are assured a steady, reliable source for procuring raw materials in practically every branch of paper making.

Having specialized for 35 years in this one field you can depend upon a clean, well-packed, uniform product throughout; fulfillment of delivery promises; and because of our output of 300 tons daily, big tonnage at all times.

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Fresh Ground Wood Pulp
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The Pulp and Paper Trading Co.
21 East 40th Street New York City
Dealers in Domestic Chemical and Mechanical Pulps and Paper
AGENTS FOR
J. & J. Rogers Company, Au Sable Forks, N. Y.
Canadian Kraft, Ltd.
Dealers in Wayagamack Kraft
Three Rivers, Canada
EASTERN AGENTS FOR
Port Huron, Michigan, Mitscherlich Sulphite
Made by Port Huron Sulphite & Paper Co., Port Huron, Mich.

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Importers and Exporters of
Cotton, Cottonwaste, Linters,
Ramie, Jute, Rubber
Import of All Grades of Rags and Rope
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Mill Agents and Dealers
All Grades of Paper and Board
Agents for The Riverton Paper Company, Inc., Riverton, Conn. Manufacturers of light weight specialties.
Ground Wood and Chemical Pulp
STATE PULP & PAPER COMANY, Inc.
8 West 40th Street, New York City

E. J. KELLER COMPANY
INCORPORATED
200 FIFTH AVENUE
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FOREIGN AND DOMESTIC
PAPER MAKERS' SUPPLIES
COTTON, JUTE AND FLAX WASTES
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IMPORTED **TALC** DOMESTIC
We are also Headquarters for:
BLACKS
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FILLERS
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All Grades of
PAPER
and
BOARDS
A. M. Capen's Sons
Incorporated
Established 1870
60 Pearl Street
New York City

Bleached sulphite is still difficult to locate in sizable amounts for prompt delivery, and No. 1 strong bleached pulp is held at around 12 cents a pound at mills. News grade sulphite is quotable at 8 cents and domestic easy bleaching sulphite at 9.50 to 10 cents. Kraft is down somewhat to between 7 and 7.25 cents a pound at producing mills. Quotations f. o. b. shipping points are:

Bleached sulphite	12.00-13.00
Easy bleaching sulphite	9.50-10.00
News grade sulphite	8.00- 8.25
Soda pulp, bleached	8.00- 8.50
Mitscherlich unbleached	9.00- 9.50
Kraft, No. 1	7.00- 7.25
Screenings, refined	3.00- 3.25

Mechanical Pulp

After easing off considerably, prices on mechanical wood pulp have again strengthened under renewed buying at the lower basis and indications point to values being back on the road toward the high levels reached by the market a few weeks ago. A feature of the situation is the comparatively large tonnages of ground wood being imported from Scandinavia, which, it seems, was primarily at the bottom of the recent decline. Current prices on prime quality spruce pulp range around $125 per ton at grinding mills for prompt shipments, with contract quotations a matter of $5 to $10 a ton below this level. Virtually everyone connected with the ground wood trade looks for prices to go back to where they were prior to the drop. Grinders are reputed to have practically no surplus stored up and it is believed that when demand broadens as it usually does in the late fall or early winter, the lack of necessary supplies will serve to enchance values.

Chemicals

A fairly steady market exists for most kinds of papermaking chemicals and prices remain generally steady. Producers as a common thing are sold well ahead and report having little difficulty finding an outlet in the transient trade for the surplus supply.

Alum, lump ammonia	4.50- 5.00
Alum, lump starch	8.50- 9.00
Alum, powdered	5.00- 5.50
Blanc fixe, powdered	5.00- 5.50
Bleaching powder (domestic drums)	6.50- 7.00
Brimstone (ton)	17.00-18.00
Casein	14.00-16.00
Caustic soda, spot delivery	6.25- 6.75
China clay, domestic, washed	10.00-12.00
China clay, foreign	18.00-26.00
Rosin, grade E	13.75-
Satin white	2.75- 3.00
Soda ash, 58 per cent light (bags)	3.50- 4.00
Sulphite of alumina, commercial grade	5.00- 5.25
Starch, Globe, in bags	6.02-
Talc (ton)	18.00-20.00

THE ROBERT ANDREWS CO.
115-117 Franklin Street, New York
Paper Makers' Supplies
Flax Waste — Linen Thread Waste
Italian Hemp Waste — Linen Cuttings
Flax Spinners Waste — Jute Waste
Samples and Quotations on Request

J. ANDERSEN & CO.
FREDERICK BERTUCH, SPECIAL PARTNER
21 East 40th Street, New York City
Importers of Chemical Pulps
BLEACHED AND UNBLEACHED
Agents for Kellner Partington Paper Pulp Co., Ltd.
Sarpsborg, Norway; Forshaga, and Edsvalla, Sweden;
Bergvik and Ala Nya Aktiebolag, Söderham, Sweden

FRANCIS HUGHES COMPANY
Paper Mill Supplies
CORRESPONDENCE SOLICITED
Private Switch on C. B. & Q. Tracks
21st Street at Loomis
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DANIEL M. HICKS
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ESTABLISHED 1895
Foreign and Domestic
Rags, Bagging, Rope and Waste Paper
Pulp, Chemical, Colors, Wires, Felts, Clay, Casein, etc.
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BLEACHING POWDER

SPOT SHIPMENTS AND CONTRACTS

Michigan Electrochemical Company

OFFICE AND WORKS.....MENOMINEE, MICHIGAN

The Sandy Hill Iron & Brass Works

Hudson Falls
New York

Manufacturers of **Paper and Pulp Mill Machinery**

New Papers

Writing—	
White rag	30-50
White sulphite, No. 1	18-24
Colored	20-30
Ledger—	
White rag	30-55
White sulphite	20-30
Colored sulphite	22-
Colored rag	32-
Bonds—	
White rag	20-50
White sulphite	18-30
Colored sulphite	20-30
Colored rag	22-
Book—	
No. 1 S. & S. C.	18.00-20.00
Machine finished	17.00-18.00
English finished	19.00-21.00
Coated and enameled	21.00-22.00
Lithograph, M. F.	20.00-21.00
News Print—	
Rolls, contract	6.50- 7.00
Rolls, transient	11.00-12.00
Sheets	12.50-13.50
Side runs	7.00-
Cover Stock—	
Coated, both sides	12.25-
Coated, one side	12.20-
Wrappings—	
No. 1 kraft	12.00-13.00
No. 2 kraft	11.00-12.00
Boards	New York and Chicago
Solid news	120.00-125.00
Straw	100.00-110.00
Plain chip	110.00-115.00
White coated chip	140.00-150.00
Manila coated chip	135.00-145.00
Binders board	140.00-150.00

Miss Catherine Sawyer, formerly office manager of the New York headquarters of the American Writing Paper Company at 41 Park Row, has entered business for herself in Suite 1034 at 150 Nassau street, New York, acting as sales agent for paper and board manufacturers and jobbers and will handle all grades of paper and cardboard. Miss Sawyer is one of the few women conducting selling agencies in the paper trade. She is widely acquainted in the trade, has a thorough knowledge of paper and is well trained in the selling end of the business.

News Personals

E. J. Lauer, formerly with the Seaman Paper Company in its New York office, has been appointed general sales manager of the Interstate Pulp and Paper Company, whose offices are in the Grand Central Terminal, New York. Prior to going with the Seaman company, Mr. Lauer was manager of the New York office of Stone & Andrew, Inc., of Boston, Mass.

F. G. Perkins, New York representative of Riegel & Company, Inc., of Philadelphia, is spending six weeks in Europe, visiting England, France, Germany, Holland, Norway and Sweden, principally for the purpose of investigating the box board market with a view of importing such material as he finds available at attractive prices. The foreign straw board product will be given his particular attention.

Felix Lugo is now associated with the export department in the New York office of the American Writing Paper Company. Mr. Lugo was formerly president of the Paper Exports Company.

Lawrence Stedman, who has been connected with the American Writing Paper Company for the past 12 years and who has spent considerable time in the mills of that company as well as serving in the capacity of salesman in New York, has joined the sales force of Blake & Decker, Inc., distributors of fine papers of 501 Fifth avenue, New York.

After having served as sales manager for many years of Price & Pierce, Ltd., wood pulp dealers of 30 East Forty-second street, New York, Jacob Seibert expects to withdraw from his present connections on or about November 1 to enter the wood pulp business with several manufacturers. Mr. Seibert is widely known among paper manufacturers, having traveled extensively throughout the trade. The mill with which he will be affiliated is located at Nipigon, Canada, and he expects to have it in operation by December 1 next.

Clarence P. Robinson, formerly connected with the mill supplies department of Parsons & Whittemore, Inc., of New York, has associated himself with Daniel M. Hicks, Inc., 200 Fifth avenue, New York, and has assumed charge of the department embracing wood pulp, chemicals, casein, clay, colors, wires, felts, etc. Mr. Robinson was for over 12 years with the Cherry River Paper Company in its sales office in Philadelphia as well as at its mills in Richwood.

Main Paper Stock Co.

Incorporated

PACKERS OF WASTE PAPER STOCK

Old and New Rags, Bagging, Strings, Etc.

Importers—Exporters
Daily Capacity 300 Tons

Branches:
321 Pearl Street
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Holyoke (Mass.) Office—206 High St.
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No. 32 McKinley Street, Mayaguez, Porto Rico

WANTED

Draughtsman for pulp and paper mill machinery. Knowledge of foundry and machine shop practice desirable. Good chance for advancement.

Union Iron Works, Bangor, Maine

Draftsman Wanted

who has had some experience in paper mill work. Address Box 20, The Paper Industry.

For Sale

15 Noble & Wood 1800-lb. Beaters. Roll 72"x44"—condition good. For further particulars, apply: Box 22, c/o The Paper Industry.

We are prepared to deliver promptly in any desired quantity the following:

Auramine	Bismarck Brown
Basic Green	Pulp Colors
Chrysoidine R	Vegetable Tallow
Chrysoidine Y	Casein
Methyl Violet	Soda Ash
Orange	Caustic Soda
Basic News Blue	Bleaching Powder
Stearate of Calcium	Stearate of Alumina

A. Klipstein & Company

644-652 Greenwich St., New York

Philadelphia Boston Providence
Charlotte Chicago Montreal

30 Years Exporting American Paper

Our Markets: The World outside of U. S. A. and Canada.

Our Organization: Ten selling offices, besides salaried travellers and local representatives.

Our Demand: An established clientele, constantly being increased, by an aggressive sales policy.

Our Supply: Your Mill?

Present conditions in America are temporary.

Have you considered what a first-class export outlet would mean to you, with its assurance of steady demand?

Parsons Trading Company

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Bombay
Mexico, D. F.
Havana
Buenos Aires
Rio de Janeiro

Chemical Pulp

The situation in foreign wood pulp has softened to quite a degree. There has been no severe declines in prices but quotations on most grades have gradually receded until they are now on levels substantially under those prevailing not long ago. The reason behind the easier position of the market is that larger shipments have arrived from Scandinavia. Manufacturers in Sweden especially are pushing out all the supply they can market in the United States at the prices wanted so as to reduce their stocks to as low a level as possible before the close of navigation for the winter, and in frequent cases they are lowering prices to conform with the ideas of buyers on this side. Authoritative advices are to the effect that neither the Swedes nor the Norwegians have any excessive amounts of pulp to sell, having contracted for the bulk of their output for some time, but the fact remains that they are sending increased tonnages to the American market, while importations from Finland and Germany also are on the rise.

Unbleached sulphite of No. 1 quality has sold at 9.75 cents ex-dock Atlantic seaports, and there have been some supplies of this kind of sulphite of secondary quality avalaible down to 9 cents. Foreign bleached sulphite is offered in larger quantities than in a long time and is quoted at a range of 13 to 14 cents per pound on the docks on this side. Foreign easy bleaching sulphite is selling at around 10.50 cents ex-dock, while Scandinavian kraft pulp of No. 1 quality is available at 7.25 cents, and in some cases at less than this figure. The appended list of receipts at New York show that arrivals during September were considerably heavier than for some months, as follows, together with current quotations:

Bleached sulphite	$13.00-14.00
Unbleached sulphite, No. 1	9.75-10.00
Easy bleaching	10.50-11.00
Mitscherlich unbleached	10.50-11.00
Kraft	7.00- 7.25

American Transmarine Trading Co., 5,000 bales from Stockholm; Lagerloef Trading Co., 2,491 bales from Stockholm; E. M. Sargeant & Co., 1,500 bales from Hallstavik; A. J. Pagel & Co., 6,000 bales from Hallstavik; American Woodpulp Corp., 400 bales from Hallstavik, 53 bales from Gothenburg; Equitable Trust Co., 1,500 bales from Hallstavik; Scandinavian-American Trading Co., 5,453 bales from Gothenburg, 2,100 bales from Hommelvik; National City Bank, 9,947 bales from Christiania; U. S. Forwarding Co., 2,990 bales from Trieste; New York Oversea Co., 1,400 bales from Christiania; National Bank of Commerce, 2,020 bales from Christiania; Tidewater Paper Mills Co., 812 tons and 28,657 bales ground wood from Clarke City; J. Andersen & Co., 600 bales from Christiania; W. Schall & Co., 1,000 bales from Christiania; Castle, Gottheil & Overton, 263 bales from Rotterdam; American Writing Paper Co., 1,618 bales from Kobe; Corin Bros., 375 bales from Gothenburg; Order, 731 bales from Christiania, 9,406 bales from Newcastle, 1,400 bales from Copenhagen, 2,175 bales from Rotterdam; Lagerloef Trading Co., 34,298 bales of chemical and 6,564 bales of mechanical pulp from Finland.

Paper Stock

Importations of paper stock into the United States continue at a low level compared with the quantities of such goods received earlier in the year. Prices on rag stock in Europe are at heights where importers here contend they cannot bring supplies in and sell to paper mills at a profit in competition with domestic rags, with the result that orders to the other side are being cut down. The same situation applies to old rope and bagging and acts to limit importations of these materials. Most of the rags received from foreign sources at present are of medium or high quality, imports of roofing stock having been reduced to a minimum. Arrivals at the port of New York during September were as follows:

Old Rope

Maurice O'Meara Co., 116 bls. from Gothenburg; E. J. Keller Co., 173 bls. from Rotterdam, 28 coils from Hull; International Purchasing Co., 106 coils from Bristol, 726 bls. from Hull, 67 coils from Christiania; American Express Co., 128 coils from Antwerp; Order, 66 bls. from Trieste, 73 coils from Rouen, 20 bls. from Dundee.

Old Bagging

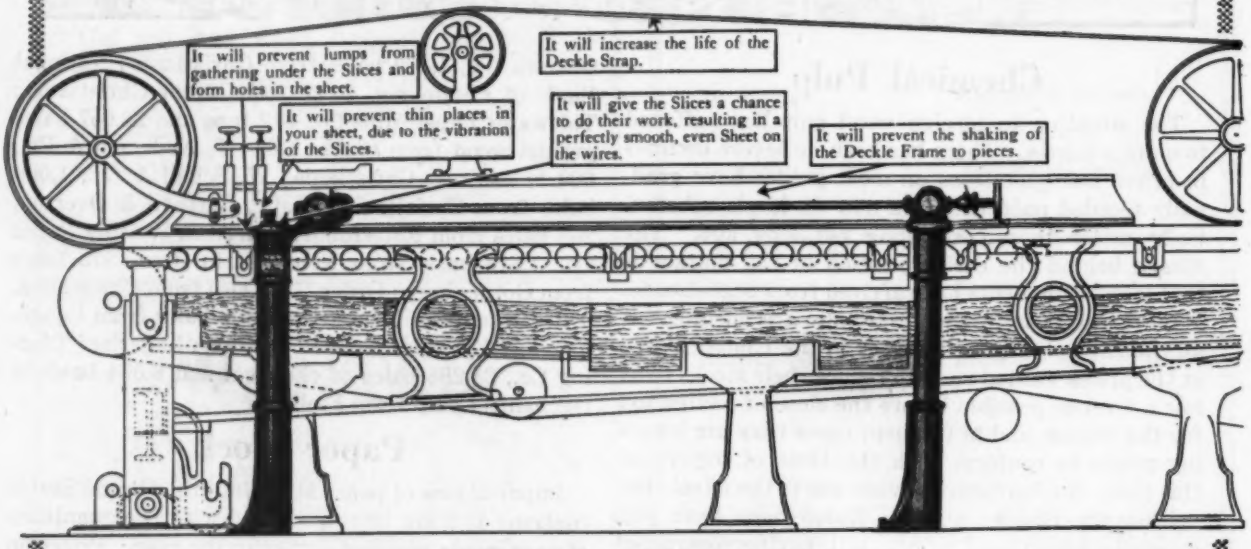
International Banking Corp., 220 bls. from Antwerp; E. J. Keller Co., 84 bls. from Genoa; British Bank of South America, 94 bls. from Liverpool; Equitable Trust Co., 69 bls. from Rouen; Nerist Bros. & Co., 100 bls. from Havre; Bank of Montreal, 374 bls. from Manchester; Order, 50 bls. from Calcutta, 764 bls. from Antwerp, 50 bls. from Genoa, 358 bls. from Rouen.

Rags

E. J. Keller Co., 170 bls. from Rotterdam, 86 bls. from Havre; American Woodpulp Corp., 235 bls. from Hamburg; I. Berg, 347 bls. from Rotterdam; Caldwell & Co., 105 bls. from Havre; R. Angelo, 16 bls. from

The Acme Deckle Frame Support

"is indispensable to the making of Good paper"


It will prevent lumps from gathering under the Slices and form holes in the sheet.
It will increase the life of the Deckle Strap.
It will prevent thin places in your sheet, due to the vibration of the Slices.
It will give the Slices a chance to do their work, resulting in a perfectly smooth, even Sheet on the wires.
It will prevent the shaking of the Deckle Frame to pieces.

It will make better edge, save breaks and take less power.

Manufactured and Distributed by

HUBAND & NASH

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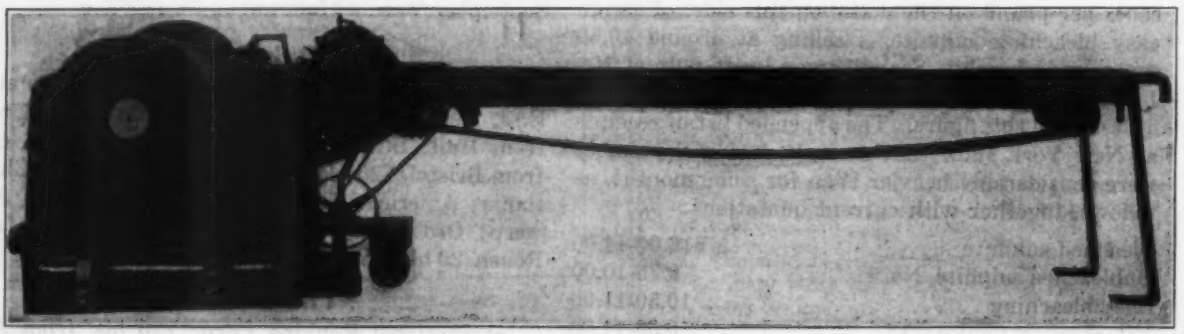
Most of the best mills in this country are equipped with this device.

No. 11 "GIANT" PAPER STOCK CUTTER



Capacity 2½ Tons Per Hour

Especially Adapted for Handling Waste Paper, Magazines, Etc., Before Feeding to the Beaters

Whatever You Cut, A GIANT Will Solve Your Problem

LET US FIGURE IT OUT FOR YOU

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133 Finsbury Pavement, London E. C.
Sole Agents for Europe

Havre; Main Paper Stock Co., 94 bls. from Rotterdam; E. Gross & Co., 198 bls. from Rotterdam; Salomon Bros. & Co., 69 bls. from Rotterdam, 114 bls. from Antwerp, 16 bls. from Manchester; Maurice O'Meara Co., 42 bls. from Rotterdam, 40 bls. from Havre; Dallas Waste Mills, 84 bls. from Rotterdam; Gatti-McQuade Co., 259 bls. from Rotterdam; Jaffe & Co., 90 bls. from Rotterdam, 38 bls. from Havana; Excel Remnants Co., 14 bls. from Rotterdam; Leshner Paper Stock Co., 804 bls. from Rotterdam; Castle, Gottheil & Overton, 280 bls. from Rotterdam, 262 bls. from Bordeaux, 495 bls. from Havre, 421 bls. from San Juan; Albion Trading Co., 41 bls. from London, 8 bls. from Liverpool, 37 bls. from Manchester, 47 bls. from Dublin; Atterbury Bros., 100 bls. from Havre; Equitable Trust Co., 34 bls. from Antwerp, 228 bls. from Havre; Atlantic National Bank, 32 bls. from Antwerp; National City Bank, 31 bls. from Antwerp; Mechanics & Metals National Bank, 260 bls. from Havre, 230 bls. from Antwerp; Foreign Banking Corp., 338 bls. from Antwerp; Guaranty Trust Co., 71 bls. from Glasgow; Lloyd Royal Belge, 212 bls. from Antwerp; W. Schall & Co., 170 bls. from Havre, 288 bls. from Leith; Brown Bros. & Co., 281 bls. from Glasgow; American Express Co., 145 bls. from London; Order, 38 bls. from Trieste, 236 bls. from Hamburg, 256 bls. from London, 28 bls. from Liverpool, 1,343 bls. from Rouen, 101 bls. from Buenos Aires.

Miscellaneous Paper Stock

Guaranty Trust Co., 73 bls. from Copenhagen; American Express Co., 118 bls. from Glasgow; Equitable Trust Co., 85 bls. from Glasgow; G. W. Millar & Co., 20 bls. from Rotterdam; Castle, Gottheil & Overton, 216 bls. from Rotterdam, 23 bls. from Belfast; Wilkinson Bros. & Co., 260 bls. from Rotterdam; A. Bronstein & Son, 40 bls. from London; Ladenburg, Thalman & Co., 83 bls. from Manchester; Mente & Co., 195 bls. from Manchester; American Exchange National Bank, 233 bls. from Belfast; Irving National Bank, 194 bls. from Belfast; Order, 115 bls. from London, 511 bls. from Belfast, 121 bls. from Dundee.

Paper

The leading feature in current importations of paper into the United States is the arrival of news print paper from Scandinavian countries and from Germany. Shippers in these countries are taking advantage of the high market value of print paper here and are diverting substantial tonnages to America. Another feature is the continued receipt of large lots of cigarette paper from France, which has constituted probably the bulk of our import trade in paper since the war. Fair amounts of hanging and wrapping papers are being imported from Europe, and importers also are turning their attention to acquiring paper board on the other side of the Atlantic. Arrivals at New York in September follow:

Importers of

SCANDINAVIAN

PULP

and Exporters of

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PAPER

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Of Modern Design and Construction. Fourdrinier and Cylinder Machines of All Kinds. ROTARY SCREENS (System Spangenberg) for Pulp or Paper

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Of the Largest Sizes and Highest Efficiencies

SPIRAL PUMPS for Medium and Low Heads. *Built from* I. P. Morris Designs, *Under Arrangement with* The Wm. Cramp & Sons Ship and Engine Building Co.

Operating Modern Machine Shop and Iron Foundry equipped to handle the largest classes of

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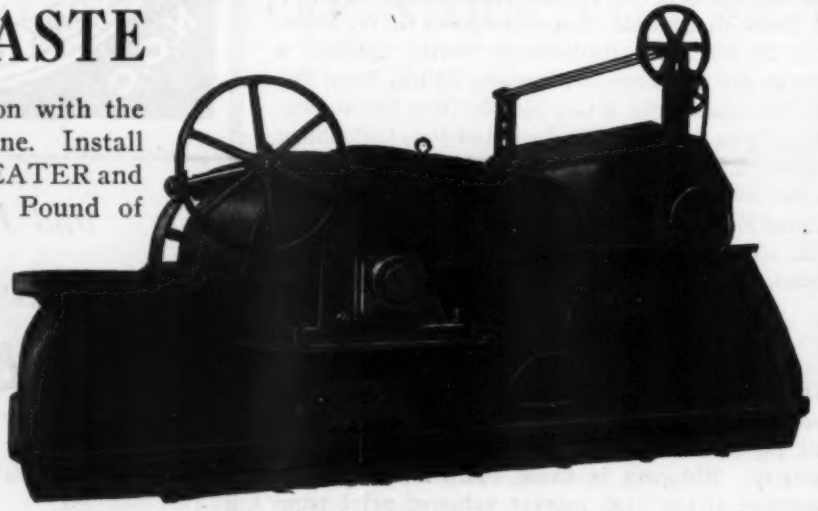
Your Power by the Ton with the Ordinary Beating Engine. Install an UMPHERSTON BEATER and Save Power on Every Pound of Stock.

"We Build our Machinery to Meet Your Requirements"



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Information and Booklets describing our Specialties sent to you on request

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SOME OF THE "HOLYOKE" SPECIALTIES—Chilled Iron Rolls, Cotton Rolls, Paper Rolls, Wood Pulp Grinders, Wood Barkers, Wood Chippers, "Umpherston" Beaters, Rag and Paper Dusters, Washing and Beating Engines, Reeling Machines, Hydraulic Pumps, Hydraulic Presses, Coated Paper Strainers, Turbine Wheels, Gearing and Shafting, Calenders, Platers, Rag Cutters

Cigarette

Southern Pacific Co., 3 cs. from Havre; R. J. Reynolds Tobacco Co., 820 cs. from Bordeaux; P. J. Schweitzer, 165 cs. from Bordeaux, 358 cs. from Havre, 168 cs. from Marseilles; P. Lorillard Co., 280 cs. from Havre, 133 cs. from Bordeaux; Ligget & Myers Tobacco Co., 30 cs. from Havre; Rose & Frank Co., 100 cs. from Havre; American Tobacco Co., 1,600 cs. from Bordeaux, 217 cs. from Havre; C. Bondy, 32 cs. from Bordeaux; S. Alexandrie, 10 cs. from Bordeaux; Hills Bros. & Co., 50 cs. from London; W. Duke & Sons, 30 cs. from Havre; Surburg Co., 9 cs. from Havre; C. Drucklieb, 5 cs. from Havre; Wilkinson Bros. & Co., 15 cs. from Havre; Order, 25 cs. from London.

Printing

New York American, 2,446 rolls from Hallstavik; Globe Shipping Co., 148 cs. from Hamburg; Philadelphia National Bank, 653 rolls from Hamburg; B. F. Drakenfeld & Co., 85 cs. from Liverpool; Bank of the United States, 1,378 rolls from Christiania; White-Burbank Paper Co., 4 cs. from Hull; Agar Bernson Corp., 595 rolls from Bremerhaven, 721 rolls from Rotterdam; Oxford University Press, 21 cs. from Liverpool; Equitable Trust Co., 246 rolls from Hamburg; National City Bank, 246 rolls from Gothenburg; New York Oversea Co., 4 rolls from Christiania; Order, 668 rolls from Christiania, 38 cs. from Antwerp, 1,471 rolls from Bremerhaven, 742 rolls from Rotterdam.

Filter

Eimer & Amend, 23 cs. from Rotterdam; R. F. Downing & Co., 8 bls. from Hamburg; E. Fougera & Co., 50 cs. from Bordeaux; Orbis Products Trading Co., 182 bls. from Bordeaux; Lunham & Moore, 19 cs. from London; E. M. Sergeant & Co., 13 cs. from Gothenburg; Order, 24 bls. from Bordeaux.

Wrapping

Charles F. Hubbs & Co., 222 rolls from Gothenburg; Birn & Wachenheim, 23 cs. from Hamburg, 13 cs. from Christiania; Rose & Frank Co., 17 rolls from Antwerp; Import Paper Co., 22 cs. from Hamburg; Agar Bernson Corp., 78 bls. from Rotterdam; Order, 165 bls. from Hamburg.

Hanging

American Express Co., 822 bls. from Hamburg; W. H. S. Lloyd & Co., 27 pkgs. from London, 2 cs. from Rotterdam, 1 cs. from Antwerp; A. C. Dodman, Bech, Van Siclen & Co., 12 cs. from Kobe; Order, 33 Jr., 47 bls. from Liverpool; A. Murphy & Co., 7 bls. from Liverpool; A. E. Buckley, 7 cs. from Liverpool; bls. from London.

Writing

Meadows, Wye & Co., 10 cs. from Liverpool; Rikkers Bros., 2 cs. from Rotterdam, 4 cs. from Liverpool; T. P. Starr, 6 cs. from Havre; J. W. Hampton, Jr., & Co., 11 cs. from Hamburg.

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Cut down *excessive* wrapping paper investment. Why carry two wrapping paper lines for one wrapping paper *purpose?*

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ELECTRIC HOISTS *Catalogs Free*

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The Cost of a Paper Machine Wire Can Be Figured Only on the Basis of Service Rendered

1—Rapid strides are being made today in combining materials to produce a result which will give greater service.

2—A metal has been perfected for the manufacture of wires, other than fourdriniers for paper and pulp mills called NICKEL ALLOY.

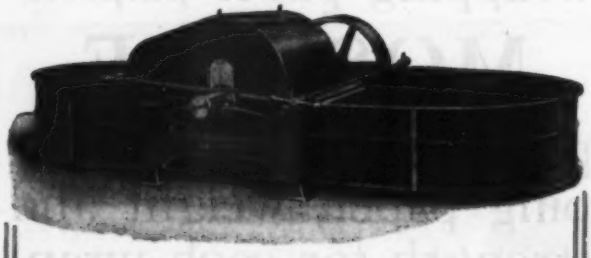
3—**O'NEILL NICKEL ALLOY** wires have demonstrated by their performance in some of the largest mills of this country, that their life and service show approximately 400% better investment for the pulp and paper manufacturers. Upon request testimonials will be gladly submitted.

4—We recommend that you try the **O'NEILL NICKEL ALLOY WIRES.** They cost more but they are worth it.

5—We also manufacture very durable paper machine wires of brass and bronze in plain, double warp, triple chain, and twisted weaves.

Joseph O'Neill Wire Works

Southport Conn., U. S. A.



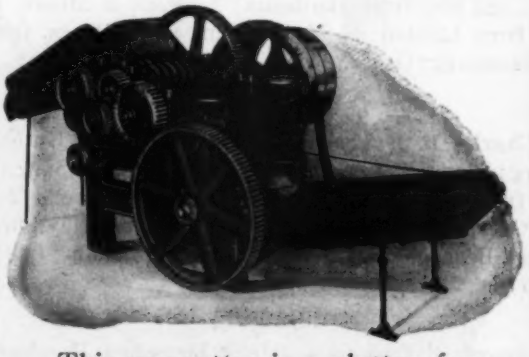
"Dayton" Beating Engines are Built for Heavy Duty

Dayton Beater and Hoist Co.

DAYTON, OHIO

Improved Rag Cutter

"Cuts the Stock Both Ways"



This rag cutter is a glutton for work, and we believe will do double the work of an ordinary cutter.

Especially adapted for mills using high grade stock.

Write us and we will be pleased to tell you more about them.

B. F. PERKINS & SON, Inc.

Holyoke, Mass.

Drawing

Keuffel & Esser Co., 72 rolls from Hamburg; Lunham & Moore, 23 cs. from London; Favor, Ruhl & Co., 6 cs. from London.

Boards

R. F. Lang, 2 cs. from Hamburg; Favor, Ruhl & Co., 3 cs. from London; Bendix Paper Co., 46 cs. from Hamburg; Pulp & Paper Trading Co., 352 rolls from Rotterdam; A. Bourjois & Co., 17 cs. from Havre; Order, 2,240 pkgs. from Rotterdam, 20 bls. from Antwerp, 2 bls. from Gothenburg.

Miscellaneous

New York Label & Box Works, 10 cs. from Rotterdam; Mengel Co., 259 rolls from Rotterdam; P. C. Kuyper & Co., 4 bls. from Hamburg; American Express Co., 3 cs. from Bremen, 10 cs. from Hong Kong, 2 cs. from Rotterdam; E. Daiben, 3 cs. from Antwerp; M. E. Illfelder & Co., 2 cs. from Southampton; Irving National Bank, 4 cs. from Antwerp; Favor, Ruhl & Co., 7 cs. from Havre; H. D. Catty & Co., 5 cs. from Havre; F. R. Arnold & Co., 7 cs. from London; L. A. Consiller & Co., 53 cs. from Rotterdam; Ault & Wiborg Co., 50 cs. from Hong Kong; B. Meiner, 15 cs. from Hong Kong; Gluckman Strawk, 41 cs. from Naples; Cally & Co., 5 cs. from Havre; American Trading Co., 31 cs. from Yokohama, 10 cs. from Hong Kong; G. A. Johnson & Co., 31 bls. from Liverpool; Newark Paraffine & Parchment Paper Co., 64 cs. from Hamburg; Wilkinson Bros. & Co., 19 bls. from Manchester; F. L. Kraemer & Co., 10 cs. from Rotterdam; National City Bank, 144 pkgs. from Rotterdam; T. E. Minshell, 11 cs. from Southampton; F. A. Flinn & Co., 4 cs. from Havre; M. J. Corbett & Co., 3 cs. from Havre; Black & Starr, 10 cs. from Havre; Biddle Purchasing Co., 2 cs. from Havre; R. J. Coena & Co., 28 cs. from Havre; Order, 102 bls. from London.

The Pulp and Paper Trading Company, of 21 East Fortieth street, New York, dealer in wood pulp and paper, has purchased 4,400 square feet of office space on the twenty-sixth floor of the co-operatively owned and managed Park-Madison Building at Park and Madison avenues, Forty-sixth and Forty-seventh streets, New York. The managing agents of the building state that the purchaser will have no further rent to pay during the sixty-three years of the proprietary lease secured by it for $124,000. Had this space been leased at the schedule rate of $4 a square foot, the company would have paid in rent $17,715 per annum, or a total of $1,116,045 in 63 years. The offices of the Pulp and Paper Trading Company will be removed to the new location as soon as the building is ready for occupancy.

The New York office of the Canadian Export Paper Company, Ltd., of Montreal, Can., has been moved from 527 Fifth avenue to 366 Madison avenue.

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You'll find a LaBoiteaux Branch near you ready to give prompt attention to your needs. Our facilities are such as to insure your satisfaction and save time, money and effort.

Let us quote on your requirements.

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PAPER BOX BOARDS FOR
Folding Boxes
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Clay Coated Folding Box Board
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New Sand Filter

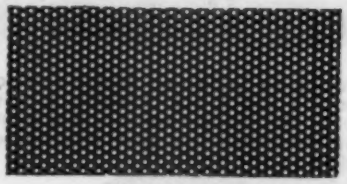
A SPECIAL filter for paper mills, producing all the results the paper manufacturer desires. It is a modification of the well known Hungerford filter adapted to paper mill use. It is constructed of concrete, strictly wrought iron pipe, brass strainers and especially prepared silica sand. It is as durable and efficient as can be built at any cost. It can be sold at a very low figure.

This filter gives perfectly clear water, washes thoroughly, does not require renewal of the sand bed, is absolutely reliable in the performance of its duty and requires a minimum amount of attention.

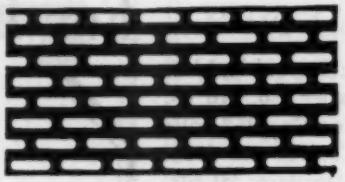
Send for full particulars

Hungerford & Terry, Inc.
PHILADELPHIA, PA.

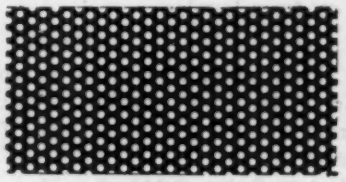
Perforated Metal Screens for Pulp and Paper Mills



.065 inch round



1/8 x 1/2" Slots



3/32 inch round

Steel, Copper, Brass, Bronze and other alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

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When Gears or Castings Break?

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Insure against accidents that happen when least expected by having on hand

Imperial Welding Equipment

Makes Its Own Acetylene

Repairs are made in minutes that once took days. You save money on new parts, because the repair castings are as strong as new.

The Imperial Welding Outfit is simple, economical and makes its own acetylene, as needed, 2 to 4 cents cheaper per cubic foot than you can buy it.

There's a size specially designed for Paper Mill use. Write today for our illustrated catalog. Gladly mailed on request.

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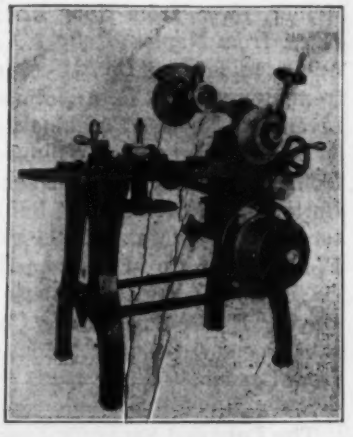
Makers of Welding, Cutting, Carbon and Lead Burning Equipment and Supplies.

The Best Grinder

The Standard Koegel

Save money by sharpening your own knives

Costs less to do it yourself and you get better work and more of it if you use only sharp cutters.



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PRESSURE PIPE THAT NEVER BURSTS.

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The Paper Industry is successfully using thousands of feet of this Pipe and they find it to be the best conveyance for Paper Stock and Acids that can be obtained.

The Pipe of Service

DURABLE—ECONOMICAL—EASY TO INSTALL

Built of selected Canadian White Pine, Wyckoff Wood Pipe is wound with steel bands whose tensile strength is 58,000 to 65,000 lbs. per square inch. The experienced engineer selects a pipe of proven dependability. Wyckoff Wood Pipe, during the past 65 years, has built a reputation that stands the keenest competition. It has been, during this time, the choice of the largest pipe users in the world. We also manufacture a high grade underground steam pipe casing.

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A. Wyckoff & Son Company

1855 **Elmira, N. Y., U. S. A.** **1920**

Buyers' Guide—What and Where to Buy

Equipment, Apparatus, Supplies and Raw Materials Used by the Paper Industry

ADHESIVES
E. F. Russ Co., 201 Devonshire St., Boston, Mass.

ACID RESISTING BRONZE
Sandusky Foundry & Machine Co., Sandusky, Ohio.
William A. Hardy & Sons, Fitchburg, Mass.

ACID RESISTING PAINT
Detroit Graphite Co., 503 12th St., Detroit, Mich.

AGITATOR EQUIPMENT
The Hill Clutch Co., Cleveland, Ohio.
Moore & White Co., Philadelphia, Pa.

AIR CONDITIONING AND CONTROL APPARATUS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.

ALKALI
Diamond Alkali Co., Pittsburgh, Pa.

ANGLE VALVES
The Crane Company, Chicago, Ill.

ARCHITECTS
James L. Carey, 208 N. Laramie St., Chicago.
Hardy S. Ferguson, 200 Fifth Ave., New York City.
George F. Hardy, 309 Broadway, New York City.

ASSORTING TABLES
Moore and White Co., Philadelphia, Pa.

ASH CONVEYOR SYSTEMS
American Steam Conveyor Corp., Chicago, Ill.

AUTOMATIC COOKING CONTROL
Trimbey & Allen, Glens Falls, N. Y.

AUTO TRUCKS
The White Co., Cleveland, O.

BALING PRESSES
Ohio Cultivator Co., Belleville, O.

BARKERS
Carthage Machine Co., Carthage, N. Y.
Holyoke Machine Co., Holyoke, Mass.
Union Iron Works, Bangor, Me.
Valley Iron Works Co., Appleton, Wis.

BARK SHREDDERS
The Jeffrey Mfg. Co., Columbus, O.

BEATER BARS
John W. Bolton & Sons, Inc., Lawrence, Mass.
Simonds Manufacturing Co., Fitchburg, Mass.

BEATER BED PLATES
John W. Bolton & Sons, Inc., Lawrence, Mass.
Simonds Manufacturing Co., Fitchburg, Mass.

BEATER ROLL FILLING
John W. Bolton & Sons, Inc., Lawrence, Mass.
Simonds Manufacturing Co., Fitchburg, Mass.

BEATING, WASHING AND BLEACHING ENGINES
Dayton Beater & Hoist Co., Dayton, Ohio.
Holyoke Machine Co., Holyoke, Mass.
Noble & Wood Machine Co., Hoosick Falls, N. Y.
Valley Iron Works Co., Appleton, Wis.

BEATERS (Continuous)
Claflin Engineering Co., Lancaster, Ohio.
The Griley-Unkle Eng. Co., Ft. Wayne, Ind.
Bird Machine Co., East Walpole, Mass.

BELTING (Rubber)
United States Rubber Co., New York and Chicago

BELT CONVEYORS
The Jeffrey Mfg. Co., Columbus, O.
Robins Conveying Belt Co., New York City.

BELT FASTENERS
Crescent Belt Fastener Co., 381 Fourth Ave., New York City.

BELT DRIVES
The Hill Clutch Co., Cleveland, Ohio.
The Link Belt Co., Chicago, Ill.

BLEACHING POWDER
Michigan Electrochemical Co., Menominee, Mich.

BLEACHING (Propellers)
Moore and White Co., Philadelphia, Pa.

BLANKETS
Frank F. Alt., 421 Columbia St., La Fayette, Ind.

BLOWERS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.
B. F. Sturtevant Co., Hyde Park, Boston, Mass.

BOARD MACHINES
Beloit Iron Works, Beloit, Wis.
Valley Iron Works, Appleton, Wis.
Grasselli Chemical Co., Cleveland, Ohio.
A. Klipstein & Co., 644 to 652 Greenwich St., New York City.

BOARDS (Straw)
The C. L. La Boiteaux Co., Cincinnati, O.

BOILERS
J. F. Davis, Chicago.

BOILER FEEDER
The Farnsworth Co., Conshohocken, Pa.

BOILER FEED REGULATOR
Northern Equipment Co., 104 W. 11th St., Erie, Pa.

BOILER SETTINGS
McLeod & Henry Co., Troy, N. Y.

BRASS TUBES
Wheeler Condenser & Engineering Co., Carteret, N. J.

BRASS WIRE CLOTH
Appleton Wire Works, Appleton, Wis.
Cheney Bigelow Wire Works, Springfield, Mass.
Lindsay Wire Weaving Co., Cleveland, Ohio.
W. S. Tyler Co., Cleveland, Ohio.

BRICK & TILE
Maurice A. Knight, East Akron, O.

BROKERS & FORWARDING AGENTS
Parsons Trading Co., 17 Battery Place, N. Y. C.

BRIMSTONE
Union Sulphur Co., 17 Battery Place, New York City.

BRONZE CASTINGS
Eastwood Wire Mfg. Co., Columbus, O.

BRONZE JACKETS
Sandusky Foundry & Machine Co., Sandusky, Ohio.

BUNDLING SYSTEMS
Signode System, Lake St., Chicago

CALENDERS
Beloit Iron Works, Beloit, Wis.
Holyoke Machine Co., Holyoke, Mass.

CALENDER DOCTORS
Ticonderoga Machine Works, Ticonderoga, N.Y.

CALENDER ROLLS
Holyoke Machine Co., Holyoke, Mass.
B. F. Perkins and Son, Inc., Holyoke, Mass.

CASEIN
J. A. & W. Bird & Co., 88 Pearl St., Boston, Mass.
The Kalbfleisch Corp., 31 Union Square, N. Y. C.

CAST IRON PIPE
U. S. Cast Iron Mfg. Co., Pittsburgh, Pa.
Cast Iron Publicity Bureau, New York City.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.

CAUSTIC SODA
Diamond Alkali Co., Pittsburgh, Pa.

CAUSTICIZING APPARATUS
Glamorgan Pipe & Foundry Co., Lynchburg, Va.

CENTRIFUGAL PUMPS
American Steam Pump Co., Battle Creek, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Glens Falls Machine Works, Glens Falls, N. Y.
Valley Iron Works Co., Appleton, Wis.
Wheeler Condenser & Engineering Co., Carteret, N. J.

CHEMICALS
Eastern Paper Makers' Chemical Co., Watertown, N. Y.
The Grasselli Chemical Co., Cleveland, Ohio.
A. Klipstein & Co., 644 to 652 Greenwich St., New York City.
Paper Makers' Chemical Co., Easton, Pa., and Holyoke, Mass.
Mathieson Alkali Works, Inc., New York City.
Western Paper Makers' Chemical Co., Kalamazoo, Mich.

CHIP CRUSHERS
Carthage Machine Co., Carthage, N. Y.

CHIPPERS
Holyoke Machine Co., Holyoke, Mass.
Union Iron Works, Bangor, Me.
Valley Iron Works Co., Appleton, Wis.

CHIPPER AND BARKER KNIVES
John W. Bolton & Sons, Inc., Lawrence, Mass.
Simonds Manufacturing Co., Fitchburg, Mass.

CHIP SCREENS
Carthage Machine Co., Carthage, N. Y.

CLAYS AND FILLERS
Binney & Smith Co., 81 Fulton St., N. Y. C.
J. A. & W. Bird & Co., 88 Pearl St., Boston, Mass.
Empire Size & Chemical Corp., P. O. Box 26, Albany, N. Y.
Daniel M. Hicks, 200 Fifth Ave., New York City.
Eastern Paper Makers' Chemical Co., Watertown, N. Y.
English China Clays Sales Corp., 33 West 42nd St., New York City.
International Pulp Co., 41 Park Row, N. Y. C.
Innis Speiden & Co., 46 Cliff St., N. Y. City.
Miner-Edgar Co., 110 William St., N. Y. C.
Paper Makers' Chemical Co., Easton, Pa., and Holyoke, Mass.
John Richardson Co., 201 Devonshire St., Boston, Mass.
R. T. Vanderbilt Co., 50 E. 42nd St., New York City.
Western Paper Makers' Chemical Co., Kalamazoo, Mich.

COAL BUNKERS
The Brownhoist Co., Cleveland, Ohio.
The Jeffrey Mfg. Co., Columbus, O.

COAL & ASH HANDLING SYSTEMS
R. H. Beaumont Co., 394 Arch St., Philadelphia, Pa.
Godfrey Conveyor Co., 119 13th St., Elkhart, Ind.
The Jeffrey Mfg. Co., Columbus, O.

COATED PAPERS
Bardeen Paper Co., Otsego, Mich.
Bermingham & Prosser, Chicago, Ill.
Seaman Paper Co., Chicago, Ill.

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Wheeler Condensing & Engineering Co., Carteret, N. J.

CONSISTENCY REGULATOR
Trimbey & Allen, Glens Falls, N. Y.

CONSTRUCTION (Building)
Casper Ranger Construction Co., Holyoke, Mass.

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Hardy S. Ferguson, 200 Fifth Ave., New York City.
George F. Hardy, 309 Broadway, New York City.

CONSULTING ENGINEERS (Power)
J. P. Carrigan Engineering Co., 304 Cunard Bldg., Chicago.

CONVEYORS
Godfrey Conveyor Co., 119 13th St., Elkhart, Ind.
The Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Chicago, Ill.
Portable Machine Co., Passaic, N. J.
Robins Conveying Belt Co., New York City.

COOLING TOWERS
Wheeler Condenser & Engineering Co., Carteret, N. J.

COPPER TUBES
Wheeler Condenser & Engineering Co., Carteret, N. J.

COTTON LINTERS
Dallas Waste Mills, 130 Pearl St., New York City.
Steele By-Products Co., Chicago.

CRANES
The Brownhoist Co., Cleveland, Ohio.
John F. Byers Co., Ravenna, Ohio.
Northern Engineering Works, Detroit, Mich.
The Chisholm-Moore Mfg. Co., Cleveland, O.
The Link Belt Co., Chicago, Ill.

CRUSHERS (Coal)
The Jeffrey Mfg. Co., Columbus, O.

CYLINDER MOLDS
Appleton Wire Works, Appleton, Wis.
Beloit Iron Works, Beloit, Wis.
Cheney Bigelow Wire Works, Springfield, Mass.
Eastwood Wire Mfg. Co., Belleville, N. J.
Glens Falls Machine Works, Glens Falls, N. Y.
The Lindsay Wire Weaving Co., Cleveland, O.
Joseph O'Neill Wire Works, Southport, Conn.
The W. S. Tyler Co., Cleveland, Ohio.

DANDY ROLLS
Appleton Wire Works, Appleton, Wis.
Central Mfg. Co., Kalamazoo, Mich.
Cheney Bigelow Wire Works, Springfield, Ohio.
Eastwood Wire Mfg. Co., Belleville, N. J.
Lindsay Wire Weaving Co., Cleveland, Ohio.
The W. S. Tyler Co., Cleveland, Ohio.

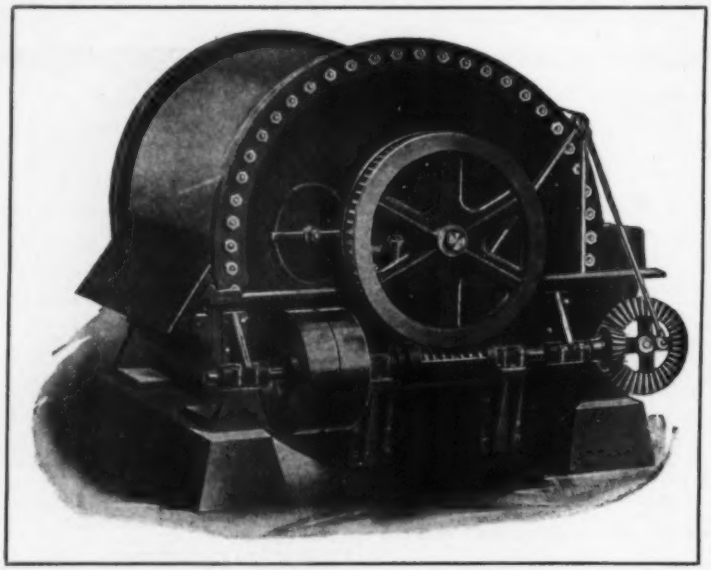
DECKEL FRAME SUPPORTS
Husband & Nash, Menasha, Wis.

DIGESTORS
The M. W. Kellogg Co., 90 West St., New York City.

DRUM WINDERS
Beloit Iron Works, Beloit, Wis.
Ticonderoga Machine Co., Ticonderoga, N. Y.

DRYER FELTS
Albany Felt Co., Albany, N. Y.

Improved Rotary Continuous Suction Filter



The best machine made for handling mud from HOT CAUSTIC SOLUTIONS from continuous causticizing and lime recovery, bicarbonate of soda, salt, kaolin, feldspar, and all purposes where filters of the revolving type are suitable.

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Glamorgan Pipe and Foundry Co., Lynchburg, Virginia

The "SIMS" Open Feed WATER HEATER, FILTER & PURIFIER

WHEN you buy a water heater, or anything else for that matter, you do not actually buy a water heater, but what it will do.

"SIMS" Open Feed Water Heater, Filter and Purifier is the product of Modern Engineering Science and has met the demand for greater efficiency.

OPEN FEED construction is the most simple and effective principle of feed water heating and has less maintenance troubles and operating costs than any other type.

WATER HEATER feeds your boilers with hot water, reduces the strain from contraction and expansion due to feeding cold water and effects a saving of approximately 14.5% in fuel.

FILTER and PURIFIER the feed water in a filtering chamber containing hard coke of suitable size as the filtering medium.

Water containing earthy matter and carbonate of lime when heated close to the boiling point is thrown out of solution into suspension and is removed by the filter.

Is installed you GET the service you bought

Ask us about the "Sims" feed-water heaters.

THE SIMS COMPANY

"We Keep Others in Hot Water."

ERIE PENNA.

Buyers' Guide—What and Where to Buy

Equipment, Apparatus, Supplies and Raw Materials Used by the Paper Industry

Appleton Woolen Co., Appleton, Wis.
F. C. Huyck & Sons.
Shuler and Benninghofen, Hamilton, Ohio.

DYNAMOS
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

DYESTUFFS
Binney & Smith, 81-83 Fulton St., N. Y. City.
E. I. Du Pont de Nemours & Co., Wilmington, Del.
Geigy Co., Inc., 89 Barclay St., New York City.
National Aniline & Chem. Co., 21 Burling Slip, New York City.
The Newport Chemical Works, Inc., Passaic, N. J.
The White Tar Aniline Corp., 56 Vesey St., New York City.

DUST COLLECTING SYSTEMS
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.

ELECTRIC HOISTS
John F. Byers Machine Co., Ravenna, Ohio.
Link-Belt Co., Chicago, Ill.
Northern Engineering Co., Detroit, Mich.

ELECTRIC MACHINERY
Westinghouse Elec. & Mfg. Co. East Pittsburgh, Pa.

ELEVATORS
The Jeffrey Mfg. Co., Columbus, O.

ELEVATORS (Portable)
The Jeffrey Mfg. Co., Columbus, O.

ENGINES
Ball Engine Co., Erie, Pa.
The Brownell Co., Dayton, O.
Chandler and Taylor, Indianapolis, Ind.

ENGINEERS
James L. Carey, 208 North Laramie St., Chicago, Ill.
John F. Carrigan, Chicago, Ill.
George F. Hardy, 309 Brodway, New York City.
Hardy S. Ferguson, 200 Fifth Ave., New York City.
Stebbins Engineering & Mfg. Co., Watertown, N. Y.

ENGINEERS (Testing)
Widney Test Laboratories, Chicago, Ill.

EVAPORATORS:
Buffalo Foundry & Machine Co., Buffalo, N. Y.
Charles Ordway, 25 Church St., N. Y. City.
Swenson Evaporator Co., Chicago, Ill.
Wheeler Condenser & Engineering Co., Carteret, N. J.
Zaremba Co., Buffalo, N. Y.

EXHAUSTERS
Glamorgan Pipe & Foundry Co., Lynchburg, Va.

FANS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.
B. F. Sturtevant Co., Hyde Park, Boston, Mass.

FELTS AND JACKETS
Albany Felt Co., Albany, N. Y.
Appleton Woolen Co., Appleton, Wis.
F. C. Huyck & Sons, Albany, N. Y.
Lockport Felt Co., Newfane, N. Y.
Shuler and Benninghofen, Hamilton, Ohio.

FELT AND WIRE GUIDES
Huband and Nash, Menasha, Wis.
Moore & White Co., Philadelphia, Pa.

FIBROUS PEARL FILLER
Eastern Paper Makers' Chemical Co., Watertown, N. Y.
Paper Makers' Chemical Co., Easton, Pa., and Holyoke, Mass.
Western Paper Makers' Chemical Co., Kalamazoo, Mich.

FILTER (Continuous Suction)
Glamorgan Pipe & Foundry Co., Lynchburg, Va.

FILTERS (Pressure and Gravity)
Graver Corporation, East Chicago, Ind.
Hungerford & Terry, Inc., Philadelphia, Pa.

FIRE BRICK
Oliver Bros., 97 Warren St., New York City.

FOURDRINIER WIRES
Appleton Wire Works, Appleton, Wis.
Cheney Bigelow Wire Works, Springfield, Mass.
Eastwood Wire Mfg. Co., Belleville, N. J.
Lindsay Wire Weaving Co., Cleveland, Ohio.
Joseph O'Neill Wire Works, Southport, Conn.
The W. S. Tyler Co., Cleveland, Ohio.

FRICTION CLUTCHES
The Hill Clutch Co., Cleveland, Ohio.
Moore and White Co., Philadelphia, Pa.

FURNACE ARCHES
McLeod & Henry Co., Troy, N. Y.

FUSES
Economy Fuse & Mfg. Co., Kinzie and Orleans Sts., Chicago, Ill.

GEARS
The Hill Clutch Co., Cleveland, Ohio.

GLUES
E. F. Russ Co., 201 Devonshire St., Boston, Mass.

GRINDERS
The Bagley & Sewall Co., Watertown, N. Y.
Glens Falls Machine Works, Glens Falls, N. Y.
Holyoke Machine Co., Holyoke, Mass.
Valley Iron Works, Appleton, Wis.

HEATERS (Feed Water)
Graver Corporation, East Chicago, Ind.
The Sims Co., Erie, Pa.
Wheeler Condenser & Engineering Co., Carteret, N. J.

HOISTING AND CONVEYING SYSTEMS
John F. Byers Machine Co., Ravenna, Ohio.
The Chisholm-Moore Mfg. Co., Cleveland, Ohio.
The Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Chicago, Ill.
Northern Engineering Co., Detroit, Mich.
Robins Conveying Belt Co., New York City.

HOSE
United States Rubber Co., Chicago, Ill.

HYDRAULIC TURBINES
Dominion Engineering Works, Ltd., Montreal, Quebec.
Holyoke Machine Co., Holyoke, Mass.
James Leffel and Co., Springfield, Ohio.
S. Morgan Smith Co., York, Pa.

INSTRUMENTS (Testing)
Widney Test Laboratories, Chicago, Ill.

IRON CASTINGS
Beloit Iron Works, Beloit, Wis.
Valley Iron Works Co., Appleton, Wis.

JORDAN FILLINGS
J. W. Bolton & Sons, Inc., Lawrence, Mass.

KNIVES
E. C. Atkins & Co., Indianapolis, Ind.
John W. Bolton & Sons, Inc., Lawrence, Mass.
Simonds Manufacturing Co., Fitchburg, Mass.

LAYBOYS
Moore and White Co., Philadelphia, Pa.

KNIFE GRINDING MACHINERY
Machinery Co. of America, Big Rapids, Mich.

LIGHTING EQUIPMENT
Benjamin Electric Co., Chicago, Ill.

LINE SHAFT BEARINGS
The Hill Clutch Co., Cleveland, Ohio.

MACHINE DRYER TEMP. CONTROL
Open Coil Heater and Purifier Co., Indianapolis, Ind.
Valley Iron Works, Appleton, Wis.

MECHANICAL DRAFT APPARATUS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.
B. F. Sturtevant Co., Hyde Park, Boston, Mass.

MECHANICAL PULP
J. Andersen & Co., 21 E. 40th St., New York City.

MECHANICAL STOKERS
Sanford Riley Stoker Co., Worcester, Mass.

METAL PROTECTIVE PAINT
Detroit Graphite Co., 503 12th St., Detroit, Mich.

METERS (Gasoline)
Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.

MILL ARCHITECTS
Stebbins Engineering & Mfg. Co., Watertown, N. Y.

MIXING SYSTEM
Trimbey & Allen, Glens Falls, N. Y.

MILL WHITE
Detroit Graphite Co., 503 12th St., Detroit, Mich.

MOISTURE TESTER
Williams Apparatus Co., Watertown, N. Y.

MOTORS
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

OIL FILTRATIONS & CIRCULATING SYSTEMS
Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.

OIL HANDLING AND STORING EQUIPMENT
The Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.

PAINTS
Cheesman-Elliot Co., Inc., Brooklyn, N. Y.
Detroit Graphite Co., Detroit, Mich.
The Tropical Paint & Oil Co., Cleveland, O.

PAPER BOARDS
The C. L. La Boiteaux Co., 200 Fifth Ave., N. Y.
Strehl Otens Co., Inc., New York-Chicago.

PAPER CUTTERS & SLITTERS
Beloit Iron Works, Beloit, Wis.
Hamblet Machine Co., Lawrence, Mass.

PAPER DISTRIBUTORS
Bermingham and Prosser, Chicago, Ill.
H. G. Craig & Co., New York City.
Berton C. Hill Co., New York City.
Maurice O'Meara, New York City.
Seaman Paper Co., Chicago, Ill.

PAPER EXPORTERS AND IMPORTERS
Gatti-McQuade Co., 200 Fifth Ave., New York City.
E. J. Keller Company, 200 Fifth Ave., N. Y. C.
Main Paper Stock Co., 23-31 Peck Slip, New York City.
New York Overseas Co., 17 Battery Place, New York City.
Interstate Pulp and Paper Co., Grand Central Bldg., New York City.
Lagerloef Trading Co., 18 E. 41st St., N. Y. C.
Parsons Trading Co., 17 Battery Place, N. Y. C.

PAPER MACHINES
The Bagley & Sewall Co., Watertown, N. Y.
Beloit Iron Works, Beloit, Wis.
The Black-Clawson Co., Hamilton, O.
Dominion Engineering Works, Ltd., Montreal, Quebec.

PAPER MANUFACTURERS
American Writing Paper Co., Holyoke, Mass.
Bardeen Paper Co., Otsego, Mich.
Eastern Manufacturing Co., 501 Fifth Ave., N. Y. City.
Hammermill Paper Co., Erie, Pa.
Lincoln Paper Mills, Elkhart, Ind.
Marathon Paper Co., Rothschild, Wis.
Munising Paper Co., Munising, Mich.
Northern Paper Mills, Green Bay, Wis.
Oxford Paper Co., 200 Fifth Ave., N. Y. City.
State Pulp & Paper Co., New York City.
Ticonderoga Pulp & Paper Co., 522 Fifth Ave., New York City.
Wausau Sulphate Fibre Co., Mosinee, Wis.
Wolverine Paper Co., Otsego, Mich.

PAPER MANUFACTURERS' SUPPLIES
J. Andersen & Co., 21 East 40th St., New York City.
The Robert Andrews Co., 115-117 Franklin St., New York City.
Vito G. Cantasano & Bros., 185 South St., New York City.
Craig-Becker Co., 52 Vanderbilt Ave., N. Y. City.
Dallas Waste Mills, 130 Pearl St., New York City.
Diamond Alkali Co., Pittsburgh, Pa.
Eastern Paper Makers' Chemical Co., Watertown, N. Y.
Francis Hughes Co., 21st St. and Loomis Ave., Chicago.
Invincible Paper & Pulp Corporation, 135 Broadway, N. Y. City.
E. J. Keller Company, 200 Fifth Ave., N. Y. C.
Main Paper Stock Co., 25 Spruce St., New York City.
Mendelson Bros. Paper Stock Co., 910 Michigan Ave., Chicago.
New York Overseas Co., Inc., 17 Battery Place, New York City.
Paper Makers' Chemical Co., St. Austell, England.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
A. Salomon, Inc., New York City.
Salomon Bros. & Co., 200 Fifth Ave., N. Y. C.
Spinelli, Martin, Brooklyn, N. Y.
Steele By-Products Co., Chicago.
Western Paper Makers' Chemical Co., Kalamazoo, Mich.

PAPER MILL BROKERS
Gibbs-Brower Co., 261 Broadway, N. Y. C.

PAPER STOCK CUTTERS
Taylor, Stiles & Co., Riegelsville, N. J.

PAPER AND PULP MILL MACHINERY
Beloit Iron Works, Beloit, Wis.
The Black-Clawson Co., Hamilton, O.
The Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

PAPER TESTERS
Widney Test Laboratories, Chicago, Ill.

PARCHMENT MANUFACTURERS
Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich.
Sutherland Paper Co., Kalamazoo, Mich.

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NORTHERN PAPER MILLS, GREEN BAY, WIS.

Buyers' Guide—What and Where to Buy

Equipment, Apparatus, Supplies and Raw Materials Used by the Paper Industry

PERFORATED METALS
Charles Mundt & Sons, 57 Fairmount Ave., Jersey City, N. J.

PIPE BENDING
American Pipe Bending Co., Boston, Mass.

PIPING EQUIPMENT
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

PIPING SYSTEMS INSTALLED
Pittsburgh Piping & Equip. Co., Pittsburgh, Pa.

PLUG MACHINES
Carthage Machine Co., Carthage, N. Y.

PNEUMATIC CHIP HANDLING SYSTEMS
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.

POWER INSTRUMENTS
The Manning Gauge Co., Inc., 77 Traverse St., Boston, Mass.

POWER TRANSMISSION
Dodge Sales & Engineering Co., Mishawaka, Ind.
Link-Belt Co., Chicago, Ill.
The Hill Clutch Co., Cleveland, Ohio.
Rodney Hunt Machine Co., 45 Mill St., Orange, Mass.
Valley Iron Works, Williamsport, Pa.

PULP (Chemical)
J. Andersen & Co., 21 East 40th St., New York City.
Craig-Becker Co., 52 Vanderbilt Ave., N. Y. City.
M. Gottesman & Co., 18 E. 41st St., New York City.
Daniel M. Hicks, 200 Fifth Ave., New York City.
E. J. Keller Company, 200 Fifth Ave., N. Y. C.
New York Overseas Co., Inc., 17 Battery Place, New York City.
Price & Pierce, Ltd., 30 East 42nd St., New York City.
The Pulp & Paper Trading Co., 21 East 40th St., New York City.
Scandinavian-American Trading Co., 50 East 42d St., New York City.
Lagerloef Trading Co., 18 E. 41st St., N. Y. C.

PULP EXTRACTORS
The Griley-Unkle Eng. Co., Ft. Wayne, Ind.

PULP AND PAPER MACHINERY
Beloit Iron Works, Beloit, Wis.
Bird Machine Co., East Walpole, Mass.
Carthage Machine Co., Carthage, N. Y.
Glens Falls Machine Co., Glens Falls, N. Y.
Green Bay Foundry & Mach. Works, Green Bay, Wis.
Moore & White Co., Philadelphia, Pa.
Union Iron Works, Bangor, Me.
Valley Iron Works, Appleton, Wis.

PULP GRINDERS
Carthage Machine Co., Carthage, N. Y.
Glens Falls Machine Works, Glens Falls, N. Y.
Union Iron Works, Bangor, Me.

PULP MILL BROKERS
Gibbs-Brower Co., 261 Broadway, N. Y. C.

PULP LAP SHREDDERS
The Jeffrey Mfg. Co., Columbus, O.

PULP SHREDDERS
Carthage Machine Co., Carthage, N. Y.

PULP THICKENERS
Green Bay Foundry & Mach. Works, Green Bay, Wis.

PUMPS (Stock)
Beloit Iron Works, Beloit, Wis.
Buffalo Steam Pump Co., Buffalo, N. Y.
Carthage Machine Co., Carthage, N. Y.
Glens Falls Machine Co., Glens Falls, N. Y.

PUMPS (Centrifugal)
Wheeler Condenser & Engineering Co., Carteret, N. J.

PUMPS (Deep Well)
Gregg Pump Co., Kansas City, Mo.

PUMPS (Gasoline)
Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.

PUMPS (Vacuum)
American Steam Pump Co., Battle Creek, Mich.
Buffalo Foundry and Machine Co., Buffalo, N. Y.
Dean Bros., Indianapolis, Ind.
Wheeler Condenser & Engineering Co., Carteret, N. J.

RAG AND PAPER DUSTERS
Holyoke Machine Co., Holyoke, Mass.

RAG CUTTERS
B. F. Perkins & Son, Inc., Holyoke, Mass.

REFLECTORS
Benjamin Electric Co., Chicago, Ill.

ROTARY VACUUM PUMPS
Sandusky Foundry & Machine Co., Sandusky, O.

RUBBER ROLLS
The American Wringer Co., Woonsocket, R. I.
United States Rubber Co., New York and Chicago

ROTARY SCREEN
Bird Machine Co., East Walpole, Mass.

SAVE-ALLS
Bird Machine Co., East Walpole, Mass.
Glens Falls Machine Co., Glens Falls, N. Y.

SAWS
E. C. Atkins & Co, Indianapolis, Ind.
Simonds Manufacturing Co., Fitchburg, Mass.

SCREENS
The Bagley & Sewall Co., Watertown, N. Y.
Bird Machine Co., East Walpole, Mass.
Shartle Bros. Mach. Co., Middletown, O.
Union Iron Works, Bangor, Me.

SCREEN PLATES
Central Mfg. Co., Kalamazoo, Mich.
William A. Hardy & Sons, Fitchburg, Mass.
Union Screen Plate Co., Fitchburg, Mass.

SCREEN DIAPHRAGMS
United States Rubber Co., Chicago, Ill.

SHAKE (Fourdrinier Cushion)
Wm. C. Nash, Neenah, Wis.

SHOWER PIPES
Sandusky Foundry and Machine Co., Sandusky, Ohio.

SILENT CHAIN DRIVES
The Link Belt Co., Chicago, Ill.

SIZING SYSTEMS
Eastern Paper Makers' Chemical Co., Watertown, N. Y.
Paper Makers' Chemical Co., Easton, Pa., and Holyoke, Mass.
Process Engineers, New York City.
Western Paper Makers' Chemical Co., Kalamazoo, Mich.

SLITTING AND REWINDING MACHINERY
Beloit Iron Works, Beloit, Wis.
Cameron Machine Co., Poplar St., Brooklyn, N. Y.
Hamblet Machine Co., Lawrence, Mass.
Samuel M. Langston Co., Camden, N. J.
Meisel Press Mfg. Co., 948 Dorchester, Ave., Boston 25, Mass.

SOOT BLOWERS
Diamond Power Specialty Co., Detroit, Mich.

SODA ASH
Diamond Alkali Co., Pittsburgh, Pa.

SPEED CHANGES
Moore and White Co., Philadelphia, Pa.

SPEED REDUCERS
Wm. Ganchow Co., Chicago, Ill.

STEAM JET CONVEYORS
American Steam Conveyor Corp., Chicago, Ill.

STEAM TRAPS
The Ellis Drier Co., 332 S. La Salle St., Chicago.

STOCK CIRCULATING SYSTEM
Claflin Engineering Co., Lancaster, Ohio.
Ticonderoga Machine Works, Ticonderoga, N.Y.

STOCK METER
Trimbey & Allen, Glens Falls, N. Y.

STOCK PUMPS
The Bagley & Sewall Co., Watertown, N. Y.
Beloit Iron Works, Beloit, Wis.
Buffalo Steam Pump Co., Buffalo, N. Y.

SUCTION ROLLS
Sandusky Foundry and Machine Co., Sandusky, Ohio.

SULPHITE MACHINERY
Stebbins Engineering Co., Watertown, N. Y.

SULPHITE PULP
Riordan Sales Co., Montreal, Canada.

SULPHUR
Union Sulphur Co., 17 Battery Place, New York City.

SULPHUR BURNERS
Carthage Machine Co., Carthage, N. Y.
Glens Falls Machine Works, Glens Falls, N. Y.
Valley Iron Works Co., Appleton, Wis.

TANKS (Oil Storage)
Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.
Graver Corporation, East Chicago, Ind.

TANKS (Steel)
Graver Corporation, East Chicago, Ind.

TANKS (Welded)
Wayne Oil Tank & Pump Co., Ft. Wayne, Ind.

TANKS (Water Storage)
Graver Corporation, East Chicago, Ind.

TESTERS (Moisture)
Williams Apparatus Co., Watertown, N. Y.

TUBING
Wheeler Condensing & Engineering Co., Carteret, N. J.

TURBINES (Hydraulic)
James Leffel and Co., Springfield, Ohio.
S. Morgan Smith Co., York, Pa.

VACUUM SYSTEMS
Open Coil Heater and Purifier Co., Indianapolis, Ind.

VALVES
Carthage Machine Co., Carthage, N. Y.
The Crane Co., Chicago, Ill.
G. M. Davis Regulator Co., 414 Milwaukee Ave., Chicago, Ill.
Golden-Anderson Valve Spec. Co., 1203 Fulton Bldg., Pittsburgh, Pa.
The Wm. Powell Co., Cincinnati, Ohio.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

VALVES (Strainer)
Bird Machine Co., East Walpole, Mass.

VAPOR ABSORPTION SYSTEMS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.
B. F. Sturtevant Co., Hyde Park, Boston, Mass.

VARIABLE SPEED ENGINES
Ball Engine Co., Erie, Pa.
The Brownell Co., Dayton, Ohio.
Chandler and Taylor, Indianapolis, Ind.

VENTILATING SYSTEMS
American Blower Co., Detroit, Mich.
Bayley Mfg. Co., 732 Greenbush St., Milwaukee, Wis.
B. F. Perkins & Son, Inc., Holyoke, Mass.
B. F. Sturtevant Co., Hyde Park, Boston, Mass.

WASHER WIRES
The W. S. Tyler Co., Cleveland, Ohio.

WASTE PAPER STOCK
Francis Hughes Co., 21st and Loomis Street, Chicago.
Main Paper Stock Co., 23-31 Peck Slip, New York City.
F. G. Marquardt, Inc., 345 Broadway, N. Y. C.
Martin Spinelli, 132 Nassau St., New York City.
Mendelson Bros. Paper Stock Co., 910 S. Michigan Blvd., Chicago, Ill.
Salomon Bros. & Co., 200 Fifth Ave., N. Y. C.

WATCHMAN'S CLOCKS
Chicago Watchman's Clock Works, 1526 Wabash Ave., Chicago.

WATER FILTER
Glens Falls Machine Co, Glens Falls, N. Y.
Green Bay Foundry & Mach. Works, Green Bay, Wis.
Hungerford & Terry, Inc., Philadelphia, Pa.

WATER HEATERS:
Graver Corporation, East Chicago, Ill.
The Sims Co., Erie, Pa.

WATER POWER EQUIPMENT
Rodney Hunt Mach. Co., 45 Mill St., Orange, Mass.

WATERPROOF LINING
The National Waterproofing Co., Philadelphia, Pa.

WATER-SOFTENING AND PURIFYING SYSTEMS
Graver Corporation, East Chicago, Ind.
Wm. B. Scaife and Sons Co., Oakmont, Pa.

WATER WHEELS
James Leffel and Co., Springfield, Ohio.
Holyoke Machine Co., Holyoke, Mass.
S. Morgan Smith Co., York, Pa.

WELDING & CUTTING EQUIPMENT
The Imperial Brass Mfg. Co., 516 So. Racine Ave., Chicago.

WET MACHINES
The Bagley & Sewall Co., Watertown, N. Y.
Carthage Machine Co., Carthage, N. Y.
Glens Falls Machine Works, Glens Falls, N. Y.
Valley Iron Works Co., Appleton, Wis.

WOOD CHIP SHREDDERS
The Jeffrey Mfg. Co., Columbus, O.

WOOD PIPE
The Michigan Pipe Co., Dept. 17, Bay City, Mich.
A. Wyckoff & Son Co., Elmira, N. Y.

WOOD ROLLS
Rodney Hunt Mach. Co., 45 Mill St., Orange, Mass.

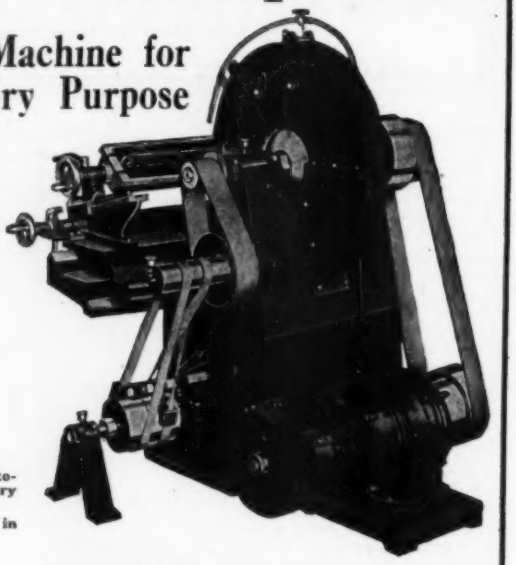
WOOD SPLITTERS
Carthage Machine Co., Carthage, N. Y.

WOOD WASHERS
Carthage Machine Co., Carthage, N. Y.

WIRE SIGNS
Cheney Bigelow Wire Works, Springfield, Mass.

Scientific Grinding Development

A Machine for Every Purpose



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It multiplies the best features of both
By extraordinary tensile strength
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An absence of stretch
Defiance of moisture and running heat
Stability of piles which retain unusual
Flexing Properties
After all, "SENSATION" will be YOUR Belt.
A sample will SHOW more than we can TELL here.

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New York Office, 30 Reade Street

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When writing them, Please mention The Paper Industry

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Appleton Woolen Mills 1075
Atkins & Co., E. C. 1079

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Bardeen Paper Co. 1034
Bayley Mfg. Co. 1071
Beaumont Co., R. H. 942
Beloit Iron Works. Inside Back Cover
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Bird & Co., J. A. & W. 1069
Bird Machine Co. 953
Black-Clawson Co., The 1065
Bolton, John W., & Son 1075
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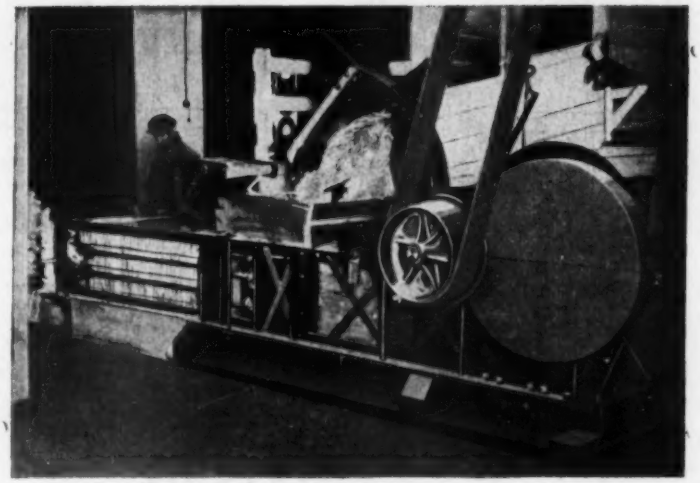

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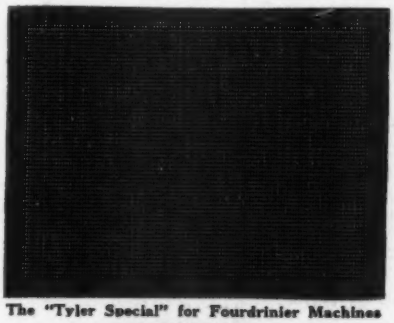

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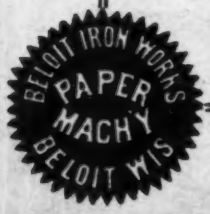

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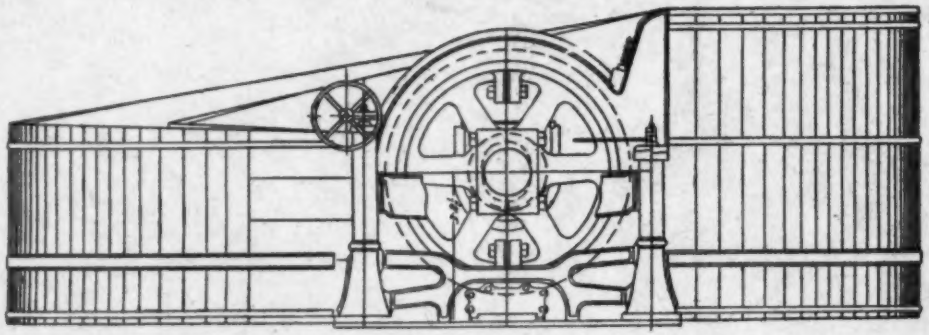

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